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 NEWS  1           Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2           "Ask CAS" for self-help around the clock
 NEWS  3  FEB 25   CA/CAPLUS - Russian Agency for Patents and Trademarks
                   (ROSPATENT) added to list of core patent offices covered
 NEWS  4  FEB 28   PATDPAFULL - New display fields provide for legal status
                   data from INPADOC
 NEWS  5  FEB 28   BABS - Current-awareness alerts (SDIs) available
 NEWS  6  FEB 28   MEDLINE/LMEDLINE reloaded
 NEWS  7  MAR 02   GBFULL: New full-text patent database on STN
 NEWS  8  MAR 03   REGISTRY/ZREGISTRY - Sequence annotations enhanced
 NEWS  9  MAR 03   MEDLINE file segment of TOXCENTER reloaded
 NEWS  10 MAR 22   KOREAPAT now updated monthly; patent information enhanced
 NEWS  11 MAR 22   Original IDE display format returns to REGISTRY/ZREGISTRY
 NEWS  12 MAR 22   PATDPASPC - New patent database available
 NEWS  13 MAR 22   REGISTRY/ZREGISTRY enhanced with experimental property tags
 NEWS  14 APR 04   EPFULL enhanced with additional patent information and new
                   fields
 NEWS  15 APR 04   EMBASE - Database reloaded and enhanced
 NEWS  16 APR 18   New CAS Information Use Policies available online
 NEWS  17 APR 25   Patent searching, including current-awareness alerts (SDIs),
                   based on application date in CA/CAplus and USPATFULL/USPAT2
                   may be affected by a change in filing date for U.S.
                   applications.
 NEWS  18 APR 28   Improved searching of U.S. Patent Classifications for
                   U.S. patent records in CA/CAplus

 NEWS EXPRESS  JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

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  * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 15:24:20 ON 04 MAY 2005
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=> index medicine
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS,
       CEN, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE,
       ESBIOBASE, IFIPAT, IMSDRUGNEWS, IMSPRODUCT, IPA, JICST-EPLUS, KOSMET,
       LIFESCI, MEDICONF, MEDLINE, NAPRALERT, ...' ENTERED AT 15:24:33 ON 04 MAY
2005

39 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and rheumatoid arthritis
          3   FILE BIOSIS
          5   FILE CAPLUS
  11 FILES SEARCHED...
          3   FILE EMBASE
          2   FILE ESBIOBASE
          1   FILE IFIPAT
          1   FILE LIFESCI
          2   FILE MEDLINE
          3   FILE NLDB
          2   FILE PASCAL
  31 FILES SEARCHED...
          2   FILE SCISEARCH
         28   FILE USPATFULL

  11 FILES HAVE ONE OR MORE ANSWERS,   39 FILES SEARCHED IN STNINDEX

L1   QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S) NICOTINIC AND RHEUMATOID ARTHRITIS

=> d rank
F1          28   USPATFULL
F2           5   CAPLUS
F3           3   BIOSIS
F4           3   EMBASE
F5           3   NLDB
F6           2   ESBIOBASE
F7           2   MEDLINE
F8           2   PASCAL
F9           2   SCISEARCH
F10          1   IFIPAT
F11          1   LIFESCI


=> index pharmacology
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         1.77       1.98

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BABS, BIOBUSINESS, BIOCOMMERCE, BIOENG,
       BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS, CBNB, CEN, CIN, CONFSCI, DDFB,
       DDFU, DGENE, DIOGENES, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE,
       ESBIOBASE, FEDRIP, IFIPAT, IMSDRUGNEWS, ...'
ENTERED AT 15:26:32 ON 04 MAY 2005

57 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
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search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and rheumatoid arthritis
           3   FILE BIOSIS
           5   FILE CAPLUS
           1   FILE CBNB
  18 FILES SEARCHED...
           3   FILE EMBASE
           2   FILE ESBIOBASE
           0*  FILE FEDRIP
           1   FILE IFIPAT
           1   FILE IMSRESEARCH
          14   FILE INVESTEXT
  36 FILES SEARCHED...
           1   FILE LIFESCI
           2   FILE MEDLINE
           2   FILE PASCAL
           1   FILE PHAR
           2   FILE PROMT
           2   FILE SCISEARCH
          28   FILE USPATFULL
  56 FILES SEARCHED...

  15 FILES HAVE ONE OR MORE ANSWERS,    57 FILES SEARCHED IN STNINDEX

L2    QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S) NICOTINIC AND RHEUMATOID ARTHRITIS

=> d rank
F1           28   USPATFULL
F2           14   INVESTEXT
F3            5   CAPLUS
F4            3   BIOSIS
F5            3   EMBASE
F6            2   ESBIOBASE
F7            2   MEDLINE
F8            2   PASCAL
F9            2   PROMT
F10           2   SCISEARCH
F11           1   CBNB
F12           1   IFIPAT
F13           1   IMSRESEARCH
F14           1   LIFESCI
F15           1   PHAR


=> index health
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     1.18       3.16

INDEX 'ABI-INFORM, ADISCTI, ADISINSIGHT, ADISNEWS, AQUALINE, AQUASCI,
       BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS,
       CBNB, CEN, CHEMLIST, CIN, CONFSCI, CSNB, DISSABS, EMBAL, EMBASE, ENERGY,
       ENVIROENG, ESBIOBASE, FEDRIP, FOMAD, ...' ENTERED AT 15:27:55 ON 04 MAY 2005

55 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and rheumatoid arthritis
           3   FILE BIOSIS
           5   FILE CAPLUS
           1   FILE CBNB
           3   FILE EMBASE
```

```
          2   FILE ESBIOBASE
  25 FILES SEARCHED...
          0*  FILE FEDRIP
          1   FILE IFIPAT
          1   FILE LIFESCI
          2   FILE MEDLINE
          3   FILE NLDB
          2   FILE PASCAL
  47 FILES SEARCHED...
          2   FILE PROMT
          2   FILE SCISEARCH
         28   FILE USPATFULL

  13 FILES HAVE ONE OR MORE ANSWERS,   55 FILES SEARCHED IN STNINDEX

L3   QUE (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S) NICOTINIC AND RHEUMATOID ARTHRITIS

=> d rank
F1          28   USPATFULL
F2           5   CAPLUS
F3           3   BIOSIS
F4           3   EMBASE
F5           3   NLDB
F6           2   ESBIOBASE
F7           2   MEDLINE
F8           2   PASCAL
F9           2   PROMT
F10          2   SCISEARCH
F11          1   CBNB
F12          1   IFIPAT
F13          1   LIFESCI


=> file medline
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                1.18       4.34

FILE 'MEDLINE' ENTERED AT 15:29:17 ON 04 MAY 2005

 FILE LAST UPDATED: 3 MAY 2005 (20050503/UP).  FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available.  For details enter HELP
 RLOAD at an arrow promt (=>).  See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2005 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and (rheumatoid arthritis or RA)
           978 ALPHA7
        521802 ALPHA
       1376236 7
          1418 ALPHA-7
                 (ALPHA(W)7)
        521802 ALPHA
```

```
       1376236 7
          1418 ALPHA 7
                 (ALPHA(W)7)
         27029 NICOTINIC
           845 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC
         80268 RHEUMATOID
        109889 ARTHRITIS
         47480 RHEUMATOID ARTHRITIS
                 (RHEUMATOID(W)ARTHRITIS)
        435794 RA
L4           2 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC AND (RHEUMATOID ARTHR
               ITIS OR RA)

=> d 1-2 all

L4   ANSWER 1 OF 2     MEDLINE on STN
AN   2005030497     MEDLINE
DN   PubMed ID: 15656874
TI   Autonomic neural regulation of immunity.
AU   Czura C J; Tracey K J
CS   North Shore-LIJ Research Institute, Center for Patient Oriented Research,
     Manhasset, NY, USA.. cczura@optonline.net
SO   Journal of internal medicine, (2005 Feb) 257 (2) 156-66.
     Journal code: 8904841. ISSN: 0954-6820.
CY   England: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   200503
ED   Entered STN: 20050120
     Last Updated on STN: 20050309
     Entered Medline: 20050308
AB   The 'cytokine theory of disease' states that an overproduction of
     cytokines can cause the clinical manifestations of disease.  Much effort
     has been expended to determine how cytokines are regulated in normal
     health.  Transcriptional, translational and other molecular control
     mechanisms protect the host from excessive cytokine production.  A recent
     discovery revealed an unexpected pathway that inhibits macrophage cytokine
     production.  The inflammatory reflex is a physiological pathway in which
     the autonomic nervous system detects the presence of inflammatory stimuli
     and modulates cytokine production.  Afferent signals to the brain are
     transmitted via the vagus nerve, which activates a reflex response that
     culminates in efferent vagus nerve signalling.  Termed the 'cholinergic
     anti-inflammatory pathway', efferent activity in the vagus nerve releases
     acetylcholine (ACh) in the vicinity of macrophages within the
     reticuloendothelial system.  ACh can interact specifically with macrophage
     alpha7 subunits of nicotinic ACh receptors, leading to
     cellular deactivation and inhibition of cytokine release.  This
     'hard-wired' connection between the nervous and immune systems can be
     harnessed therapeutically in animal models of inflammatory disease, via
     direct electrical stimulation of the vagus nerve, or through the use of
     cholinergic agonists that specifically activate the macrophage alpha7
     subunit of the ACh receptor.  Autonomic dysfunction has been associated
     with human inflammatory diseases including rheumatoid
     arthritis, diabetes and sepsis; whether this dysfunction results
     from the inflammatory component of these diseases, or is actually an
     underlying cause, is now less clear.  The description of the cholinergic
     anti-inflammatory now brings to the fore several new therapeutic
     strategies for inflammatory disease, and suggests that many of these
     diseases may actually be diseases of autonomic dysfunction.
CT   *Autonomic Nervous System: PH, physiology
     *Cytokines: PH, physiology
      Humans
      Inflammation: PP, physiopathology
     *Models, Neurological
```

*Neuroimmunomodulation: PH, physiology
Reflex: PH, physiology
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
CN 0 (Cytokines)

L4 ANSWER 2 OF 2 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307
AB Excessive inflammation and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, **rheumatoid arthritis** and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic inflammatory responses. This physiological mechanism, termed the 'cholinergic anti-inflammatory pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the **nicotinic** acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in alpha7-deficient mice. Thus, the **nicotinic** acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.
CT Check Tags: Female; Male
Acetylcholine: PD, pharmacology
Aging: PH, physiology
Animals
Bungarotoxins: ME, metabolism
Cells, Cultured
Electric Stimulation
Endotoxemia: GE, genetics
Endotoxemia: ME, metabolism
Humans
Inflammation: GE, genetics
*Inflammation: ME, metabolism
Macrophages, Peritoneal: DE, drug effects
*Macrophages, Peritoneal: ME, metabolism
Mice
Mice, Inbred C57BL
Mice, Knockout

Nicotine: PD, pharmacology
Protein Subunits: GE, genetics
Protein Subunits: ME, metabolism
RNA, Messenger: GE, genetics
RNA, Messenger: ME, metabolism
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
*Tumor Necrosis Factor-alpha: ME, metabolism
Vagus Nerve: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor)

=> s 7963254
L5 0 7963254

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and (tnf or tumor necrosis factor
UNMATCHED LEFT PARENTHESIS 'AND (TNF'
The number of right parentheses in a query must be equal to the number of left parentheses.

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and (tnf or tumor necrosis factor)
978 ALPHA7
521802 ALPHA
1376236 7
1418 ALPHA-7
(ALPHA(W)7)
521802 ALPHA
1376236 7
1418 ALPHA 7
(ALPHA(W)7)
27029 NICOTINIC
845 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC
50065 TNF
594700 TUMOR
156643 NECROSIS
682620 FACTOR
65608 TUMOR NECROSIS FACTOR
(TUMOR(W)NECROSIS(W)FACTOR)
L6 7 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC AND (TNF OR TUMOR NECROSIS FACTOR)

=> d 1-7 all

L6 ANSWER 1 OF 7 MEDLINE on STN
AN 2005176582 IN-PROCESS
DN PubMed ID: 15809354
TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during inflammation.
AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara; Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz Christine N
CS North Shore-LIJ, Manhasset, NY 11030.
SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050406
Last Updated on STN: 20050406

AB Endothelial cell activation plays a critical role in regulating leukocyte recruitment during inflammation and infection. Based on recent studies showing that acetylcholine and other cholinergic mediators suppress the production of proinflammatory cytokines via the **alpha7 nicotinic** acetylcholine receptor (**alpha7** nAChR) expressed by macrophages and our observations that human microvascular endothelial cells express the **alpha7** nAChR, we examined the effect of cholinergic stimulation on endothelial cell activation in vitro and in vivo. Using the Shwartzman reaction, we observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12 mg/kg) inhibit endothelial cell adhesion molecule expression. Using endothelial cell cultures, we observed the direct inhibitory effects of acetylcholine and cholinergic agents on **tumor necrosis factor** (**TNF**)-induced endothelial cell activation. Mecamylamine, an nAChR antagonist, reversed the inhibition of endothelial cell activation by both cholinergic agonists, confirming the antiinflammatory role of the nAChR cholinergic pathway. In vitro mechanistic studies revealed that nicotine blocked **TNF**-induced nuclear factor-kappaB nuclear entry in an inhibitor kappaB (IkappaB)alpha- and IkappaBepsilon-dependent manner. Finally, with the carrageenan air pouch model, both vagus nerve stimulation and cholinergic agonists significantly blocked leukocyte migration in vivo. These findings identify the endothelium, a key regulator of leukocyte trafficking during inflammation, as a target of anti-inflammatory cholinergic mediators.

L6 ANSWER 2 OF 7 MEDLINE on STN
AN 2004545484 MEDLINE
DN PubMed ID: 15502843
TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.
CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907
AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis
CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
Journal code: 9502015. ISSN: 1078-8956.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200502
ED Entered STN: 20041102
Last Updated on STN: 20050205
Entered Medline: 20050204
AB Physiological anti-inflammatory mechanisms can potentially be exploited for the treatment of inflammatory disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or **tumor necrosis factor**-alpha (**TNF**-alpha). **Nicotinic** stimulation prevents activation of the NF-kappaB pathway and inhibits HMGB1 secretion through a specific ' **nicotinic** anti-inflammatory pathway' that requires the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in experimental models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiological inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the alpha7nAChR might have therapeutic potential for the treatment of

sepsis.
CT Check Tags: Comparative Study
Acetylcholine: AG, agonists
*Acetylcholine: ME, metabolism
Animals
Cecum: IN, injuries
Fluorescent Antibody Technique
HMGB1 Protein: AI, antagonists & inhibitors
HMGB1 Protein: BL, blood
*HMGB1 Protein: ME, metabolism
Humans
*Inflammation: ME, metabolism
Lipopolysaccharides
Macrophages: ME, metabolism
Mice
Neuroimmunomodulation: PH, physiology
*Nicotine: ME, metabolism
*Nicotine: TU, therapeutic use
Oligonucleotides
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't
*Sepsis: DT, drug therapy
Sepsis: ME, metabolism
Signal Transduction: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (HMGB1 Protein); 0 (Lipopolysaccharides); 0 (Oligonucleotides); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L6 ANSWER 3 OF 7 MEDLINE on STN
AN 2004436284 MEDLINE
DN PubMed ID: 15342104
TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.
AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F
CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.
SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
Journal code: 7605818. ISSN: 0361-9230.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200411
ED Entered STN: 20040903
Last Updated on STN: 20041219
Entered Medline: 20041129
AB Chronic brain inflammation is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunological activation of brain mononuclear phagocyte cells, called microglia. This inflammatory mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) inflammation. However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-inflammatory pathway regulates systemic inflammatory response by way of acetylcholine acting at the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR) found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-inflammatory properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN-gamma and the HIV-1 coat glycoprotein, gp120. Furthermore, this

activation, as measured by **TNF**-alpha and nitric oxide (NO) release, is synergistically attenuated through the alpha7 nAChR and p44/42 MAPK system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic combination to treat or prevent the onset of HAD through this modulation of the microglia inflammatory mechanism.

CT Check Tags: Comparative Study
Analysis of Variance
Animals
Animals, Newborn
Blotting, Western: MT, methods
Cells, Cultured
Cerebral Cortex: CY, cytology
Cholinesterase Inhibitors: PD, pharmacology
Drug Synergism
Enzyme-Linked Immunosorbent Assay: MT, methods
*Galantamine: PD, pharmacology
*HIV Envelope Protein gp120: PD, pharmacology
Interferon Type II: ME, metabolism
Mice
*Microglia: DE, drug effects
Microglia: ME, metabolism
Mitogen-Activated Protein Kinase 1: ME, metabolism
Mitogen-Activated Protein Kinase 3: ME, metabolism
*Nicotine: PD, pharmacology
*Nicotinic Agonists: PD, pharmacology
Nitric Oxide: ME, metabolism
Research Support, Non-U.S. Gov't
Time Factors
Tumor Necrosis Factor-alpha: ME, metabolism

RN 10102-43-9 (Nitric Oxide); 357-70-0 (Galantamine); 54-11-5 (Nicotine); 82115-62-6 (Interferon Type II)

CN 0 (Cholinesterase Inhibitors); 0 (HIV Envelope Protein gp120); 0 (Nicotinic Agonists); 0 (**Tumor Necrosis Factor** -alpha); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 1); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 3)

L6 ANSWER 4 OF 7 MEDLINE on STN

AN 2004163757 MEDLINE

DN PubMed ID: 15056277

TI Cholinergic modulation of microglial activation by **alpha 7 nicotinic** receptors.

AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medciine, Tampa, Florida, USA.

SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200405

ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

AB Almost all degenerative diseases of the CNS are associated with chronic inflammation. A central step in this process is the activation of brain mononuclear phagocyte cells, called microglia. While it is recognized that healthy neurons and astrocytes regulate the magnitude of microglia-mediated innate immune responses and limit excessive CNS inflammation, the endogenous signals governing this process are not fully understood. In the peripheral nervous system, recent studies suggest that an endogenous 'cholinergic anti-inflammatory pathway' regulates systemic

inflammatory responses via **alpha 7 nicotinic** acetylcholinergic receptors (nAChR) found on blood-borne macrophages. These data led us to investigate whether a similar cholinergic pathway exists in the brain that could regulate microglial activation. Here we report for the first time that cultured microglial cells express alpha 7 nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochemistry analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced **TNF**-alpha release in murine-derived microglial cells, an effect attenuated by **alpha 7** selective **nicotinic** antagonist, alpha-bungarotoxin. Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, our findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through **alpha 7 nicotinic** receptors. Negative regulation of microglia activation may also represent additional mechanism underlying nicotine's reported neuroprotective properties.

CT *Acetylcholine: PD, pharmacology
Animals
Bungarotoxins: PD, pharmacology
Cells, Cultured
Lipopolysaccharides: PD, pharmacology
Mice
Mice, Inbred C57BL
Microglia: CY, cytology
*Microglia: DE, drug effects
*Microglia: ME, metabolism
Mitogen-Activated Protein Kinases: ME, metabolism
Nicotine: PD, pharmacology
Nicotinic Antagonists: PD, pharmacology
Phosphorylation: DE, drug effects
Receptors, Nicotinic: DE, drug effects
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't
Signal Transduction: DE, drug effects
Tumor Necrosis Factor-alpha: ME, metabolism
p38 Mitogen-Activated Protein Kinases

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)

CN 0 (Bungarotoxins); 0 (Lipopolysaccharides); 0 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (**Tumor Necrosis Factor**-alpha); 0 (alpha-bungarotoxin receptor); EC 2.7.1.37 (Mitogen-Activated Protein Kinases); EC 2.7.1.37 (p38 Mitogen-Activated Protein Kinases)

L6 ANSWER 5 OF 7 MEDLINE on STN

AN 2003509329 MEDLINE

DN PubMed ID: 14506129

TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.

AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel

CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.

SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
Journal code: 9208958. ISSN: 0964-6906.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200407

ED Entered STN: 20031031
Last Updated on STN: 20040709
Entered Medline: 20040708

AB Mal de Meleda is an autosomal recessive inflammatory and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human **alpha 7 nicotinic** acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing. This explains both the hyperproliferative as well as the inflammatory clinical phenotype of Mal de Meleda.

CT Check Tags: Female
Acetylcholine: ME, metabolism
Amino Acid Sequence
Animals
Antigens, Ly: CH, chemistry
*Antigens, Ly: GE, genetics
Antigens, Ly: IP, isolation & purification
Antigens, Ly: PD, pharmacology
Cell Line
Cell Nucleus: ME, metabolism
Clone Cells
DNA, Complementary: AD, administration & dosage
DNA, Complementary: ME, metabolism
Dose-Response Relationship, Drug
*Epidermis: ME, metabolism
Genes, Recessive
Humans
*Keratoderma, Palmoplantar: GE, genetics
Keratoderma, Palmoplantar: ME, metabolism
Keratoderma, Palmoplantar: PA, pathology
Microinjections
Models, Molecular
Moths: CY, cytology
Mutation
*Neurotransmitters: ME, metabolism
Oocytes: ME, metabolism
Patch-Clamp Techniques
Peptides: CH, chemistry
Peptides: GE, genetics
Peptides: ME, metabolism
Phenotype
Protein Structure, Tertiary
Receptors, Cholinergic: DE, drug effects
Receptors, Cholinergic: ME, metabolism
Recombinant Proteins: IP, isolation & purification
Recombinant Proteins: ME, metabolism
Research Support, Non-U.S. Gov't
Urinary Plasminogen Activator: CH, chemistry
*Urinary Plasminogen Activator: GE, genetics
Urinary Plasminogen Activator: IP, isolation & purification
Urinary Plasminogen Activator: PD, pharmacology
Xenopus laevis: PH, physiology

RN 51-84-3 (Acetylcholine)

CN 0 (ARS protein, human); 0 (Antigens, Ly); 0 (DNA, Complementary); 0 (Neurotransmitters); 0 (Peptides); 0 (Receptors, Cholinergic); 0 (Recombinant Proteins); EC 3.4.21.73 (Urinary Plasminogen Activator)

L6 ANSWER 6 OF 7 MEDLINE on STN

AN 2003115931 MEDLINE

DN PubMed ID: 12628466

TI A beta-induced **TNF**-alpha expression and acetylcholine action in mouse glial cells.
AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404
AB The brains in patients with Alzheimer's disease show chronic inflammatory responses characterized by activated glial cells and increased expression of cytokines. It is of interest to determine whether acetylcholine (ACh) affects Abeta-induced cytokine expression in the glial cells. Since it has been shown that **alpha7** subunits of **nicotinic** ACh receptors are expressed in glial cells and that Abeta(1-42) binds to **alpha7**, we examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Abeta-induced **TNF**-alpha expression in mouse glial cells. We did not observe any regulatory effects of ACh on Abeta-induced **TNF**-alpha transcription in the glial cells. We discuss the pathophysiological roles of ACh in glial cells in the brains of patients with Alzheimer's disease.

CT *Acetylcholine: PD, pharmacology
*Amyloid beta-Protein: PD, pharmacology
Animals
Carbachol: PD, pharmacology
Cells, Cultured
Glyceraldehyde-3-Phosphate Dehydrogenases: ME, metabolism
Inflammation: PA, pathology
Mice
Muscarinic Agonists: PD, pharmacology
Neuroglia: DE, drug effects
*Neuroglia: ME, metabolism
Nicotine: PD, pharmacology
Nicotinic Agonists: PD, pharmacology
Oxotremorine: PD, pharmacology
*Peptide Fragments: PD, pharmacology
Reverse Transcriptase Polymerase Chain Reaction
Tumor Necrosis Factor-alpha: BI, biosynthesis
RN 51-83-2 (Carbachol); 51-84-3 (Acetylcholine); 54-11-5 (Nicotine); 70-22-4 (Oxotremorine)
CN 0 (Amyloid beta-Protein); 0 (Muscarinic Agonists); 0 (Nicotinic Agonists); 0 (Peptide Fragments); 0 (**Tumor Necrosis Factor**-alpha); 0 (amyloid beta-protein (1-42)); EC 1.2.1.- (Glyceraldehyde-3-Phosphate Dehydrogenases)

L6 ANSWER 7 OF 7 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication:

2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307
AB Excessive inflammation and tumour-necrosis factor (**TNF**) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, rheumatoid arthritis and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage **TNF**, and attenuate systemic inflammatory responses. This physiological mechanism, termed the 'cholinergic anti-inflammatory pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the **nicotinic** acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage **TNF** release. Electrical stimulation of the vagus nerve inhibits **TNF** synthesis in wild-type mice, but fails to inhibit **TNF** synthesis in alpha7-deficient mice. Thus, the **nicotinic** acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.
CT Check Tags: Female; Male
Acetylcholine: PD, pharmacology
Aging: PH, physiology
Animals
Bungarotoxins: ME, metabolism
Cells, Cultured
Electric Stimulation
Endotoxemia: GE, genetics
Endotoxemia: ME, metabolism
Humans
Inflammation: GE, genetics
*Inflammation: ME, metabolism
Macrophages, Peritoneal: DE, drug effects
*Macrophages, Peritoneal: ME, metabolism
Mice
Mice, Inbred C57BL
Mice, Knockout
Nicotine: PD, pharmacology
Protein Subunits: GE, genetics
Protein Subunits: ME, metabolism
RNA, Messenger: GE, genetics
RNA, Messenger: ME, metabolism
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
***Tumor Necrosis Factor-alpha: ME, metabolism**
Vagus Nerve: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (**Tumor Necrosis Factor**-alpha); 0 (alpha-bungarotoxin receptor)

=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and inflamm?
978 ALPHA7

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        521802 ALPHA
       1376236 7
          1418 ALPHA-7
                 (ALPHA(W)7)
        521802 ALPHA
       1376236 7
          1418 ALPHA 7
                 (ALPHA(W)7)
         27029 NICOTINIC
           845 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC
        302840 INFLAMM?
L7          13 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC AND INFLAMM?

=> d 1-13 all

L7   ANSWER 1 OF 13     MEDLINE on STN
AN   2005176582     IN-PROCESS
DN   PubMed ID: 15809354
TI   Cholinergic stimulation blocks endothelial cell activation and leukocyte
     recruitment during inflammation.
AU   Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara;
     Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz
     Christine N
CS   North Shore-LIJ, Manhasset, NY 11030.
SO   Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
     Journal code: 2985109R. ISSN: 0022-1007.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED   Entered STN: 20050406
     Last Updated on STN: 20050406
AB   Endothelial cell activation plays a critical role in regulating leukocyte
     recruitment during inflammation and infection. Based on recent
     studies showing that acetylcholine and other cholinergic mediators
     suppress the production of proinflammatory cytokines via the
     alpha7 nicotinic acetylcholine receptor (alpha7
     nAChR) expressed by macrophages and our observations that human
     microvascular endothelial cells express the alpha7 nAChR, we
     examined the effect of cholinergic stimulation on endothelial cell
     activation in vitro and in vivo. Using the Shwartzman reaction, we
     observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12
     mg/kg) inhibit endothelial cell adhesion molecule expression. Using
     endothelial cell cultures, we observed the direct inhibitory effects of
     acetylcholine and cholinergic agents on tumor necrosis factor
     (TNF)-induced endothelial cell activation. Mecamylamine, an nAChR
     antagonist, reversed the inhibition of endothelial cell activation by both
     cholinergic agonists, confirming the antiinflammatory role of the nAChR
     cholinergic pathway. In vitro mechanistic studies revealed that nicotine
     blocked TNF-induced nuclear factor-kappaB nuclear entry in an inhibitor
     kappaB (IkappaB)alpha- and IkappaBepsilon-dependent manner. Finally, with
     the carrageenan air pouch model, both vagus nerve stimulation and
     cholinergic agonists significantly blocked leukocyte migration in vivo.
     These findings identify the endothelium, a key regulator of leukocyte
     trafficking during inflammation, as a target of anti-
     inflammatory cholinergic mediators.

L7   ANSWER 2 OF 13     MEDLINE on STN
AN   2005149848     IN-PROCESS
DN   PubMed ID: 15780465
TI   Antinociceptive effects of choline against acute and inflammatory
     pain.
AU   Wang Y; Su D-M; Wang R-H; Liu Y; Wang H
CS   Thadweik Academy of Medicine, Beijing 100850, PR China; Beijing Institute
     of Pharmacology and Toxicology, 27 Taiping Road, Beijing 100850, PR China.
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SO Neuroscience, (2005) 132 (1) 49-56.
Journal code: 7605074. ISSN: 0306-4522.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050323
Last Updated on STN: 20050323
AB We used the hot plate test and the formalin test to evaluate the antinociception of choline after i.c.v. or i.v. administration. The analgesic mechanism of choline was also studied. The response latency of mice was significantly prolonged in the hot plate test after choline (90-120 mug/animals) i.c.v. administration in a dose-dependent manner. Pretreatment with methyllycaconitine citrate (MLA), alpha-bungarotoxin, or atropine blocked the antinociception of choline in the hot plate test. In contrast, mecamylamine and naloxone had no effect. No antinociceptive action of choline was found in the hot plate test, but it did have an effect in the late phase of the formalin test after i.v. administration. The effect of choline on anti-**inflammatory** pain was blocked by MLA, but not by mecamylamine, naloxone and atropine, which is indicative of the involvement of alpha7 receptors in peripheral sites. When choline (2 mg/kg) was coadministered with aspirin (9.4 mg/kg), the licking/biting times in the late phase significantly decreased, although no effects were shown when these doses of drugs were used alone. Similarly, coadministration of choline (2 mg/kg) with morphine (0.165 mg/kg) significantly increased the antinociception of morphine in the late phase, but had no effect in the early phase. These results demonstrate that activation of **alpha7 nicotinic** receptors by choline elicits antinociceptive effects both in an acute thermal pain model and in an **inflammatory** pain model. Choline holds promise for development as a non-addictive analgesic drug and in reducing the regular dose of aspirin or morphine in **inflammatory** pain.

L7 ANSWER 3 OF 13 MEDLINE on STN
AN 2005030497 MEDLINE
DN PubMed ID: 15656874
TI Autonomic neural regulation of immunity.
AU Czura C J; Tracey K J
CS North Shore-LIJ Research Institute, Center for Patient Oriented Research, Manhasset, NY, USA.. cczura@optonline.net
SO Journal of internal medicine, (2005 Feb) 257 (2) 156-66.
Journal code: 8904841. ISSN: 0954-6820.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200503
ED Entered STN: 20050120
Last Updated on STN: 20050309
Entered Medline: 20050308
AB The 'cytokine theory of disease' states that an overproduction of cytokines can cause the clinical manifestations of disease. Much effort has been expended to determine how cytokines are regulated in normal health. Transcriptional, translational and other molecular control mechanisms protect the host from excessive cytokine production. A recent discovery revealed an unexpected pathway that inhibits macrophage cytokine production. The **inflammatory** reflex is a physiological pathway in which the autonomic nervous system detects the presence of **inflammatory** stimuli and modulates cytokine production. Afferent signals to the brain are transmitted via the vagus nerve, which activates a reflex response that culminates in efferent vagus nerve signalling. Termed the 'cholinergic anti-**inflammatory** pathway', efferent activity in the vagus nerve releases acetylcholine (ACh) in the vicinity of macrophages within the reticuloendothelial system. ACh can interact specifically with macrophage **alpha7** subunits of

nicotinic ACh receptors, leading to cellular deactivation and inhibition of cytokine release. This 'hard-wired' connection between the nervous and immune systems can be harnessed therapeutically in animal models of **inflammatory** disease, via direct electrical stimulation of the vagus nerve, or through the use of cholinergic agonists that specifically activate the macrophage alpha7 subunit of the ACh receptor. Autonomic dysfunction has been associated with human **inflammatory** diseases including rheumatoid arthritis, diabetes and sepsis; whether this dysfunction results from the **inflammatory** component of these diseases, or is actually an underlying cause, is now less clear. The description of the cholinergic anti-**inflammatory** now brings to the fore several new therapeutic strategies for **inflammatory** disease, and suggests that many of these diseases may actually be diseases of autonomic dysfunction.

CT *Autonomic Nervous System: PH, physiology
*Cytokines: PH, physiology
Humans
Inflammation: PP, physiopathology
*Models, Neurological
*Neuroimmunomodulation: PH, physiology
Reflex: PH, physiology
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.

CN 0 (Cytokines)

L7 ANSWER 4 OF 13 MEDLINE on STN
AN 2004545484 MEDLINE
DN PubMed ID: 15502843
TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.
CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907
AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis
CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
Journal code: 9502015. ISSN: 1078-8956.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200502
ED Entered STN: 20041102
Last Updated on STN: 20050205
Entered Medline: 20050204

AB Physiological anti-**inflammatory** mechanisms can potentially be exploited for the treatment of **inflammatory** disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or tumor necrosis factor-alpha (TNF-alpha). **Nicotinic** stimulation prevents activation of the NF-kappaB pathway and inhibits HMGB1 secretion through a specific '**nicotinic** anti-**inflammatory** pathway' that requires the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in experimental models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiological inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the alpha7nAChR might have therapeutic potential for the treatment of sepsis.

CT Check Tags: Comparative Study
Acetylcholine: AG, agonists
*Acetylcholine: ME, metabolism
Animals
Cecum: IN, injuries
Fluorescent Antibody Technique
HMGB1 Protein: AI, antagonists & inhibitors
HMGB1 Protein: BL, blood
*HMGB1 Protein: ME, metabolism
Humans
***Inflammation: ME, metabolism**
Lipopolysaccharides
Macrophages: ME, metabolism
Mice
Neuroimmunomodulation: PH, physiology
*Nicotine: ME, metabolism
*Nicotine: TU, therapeutic use
Oligonucleotides
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't
*Sepsis: DT, drug therapy
Sepsis: ME, metabolism
Signal Transduction: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (HMGB1 Protein); 0 (Lipopolysaccharides); 0 (Oligonucleotides); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 5 OF 13 MEDLINE on STN
AN 2004497226 MEDLINE
DN PubMed ID: 15465084
TI Nicotinic acetylcholine receptor immunohistochemistry in Alzheimer's disease and dementia with Lewy bodies: differential neuronal and astroglial pathology.
AU Teaktong Thanasak; Graham Alison J; Court Jennifer A; Perry Robert H; Jaros Evelyn; Johnson Mary; Hall Ros; Perry Elaine K
CS Centre Development in Clinical Brain Aging, MRC Building, Newcastle General Hospital, Westgate Road, Newcastle upon Tyne, NE4 6BE, UK.
SO Journal of the neurological sciences, (2004 Oct 15) 225 (1-2) 39-49. Journal code: 0375403. ISSN: 0022-510X.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200501
ED Entered STN: 20041007
Last Updated on STN: 20050111
Entered Medline: 20050110
AB Alzheimer's disease (AD) and dementia with Lewy bodies (DLB) are common forms of dementia in the elderly. The neuropathology of AD and DLB is related to cholinergic dysfunctions, and both alpha4 and **alpha7 nicotinic** acetylcholine receptor (nAChR) subunits are decreased in several brain areas in both diseases. In this immunohistochemical study, we compared neuronal and astroglial alpha4 and alpha7 subunits in AD, DLB and age-matched controls in the hippocampal formation. The numbers of alpha4 reactive neurons were decreased in layer 3 of the entorhinal cortex of AD and DLB, whereas those of alpha7 reactive neurons were decreased in layer 2 of the subiculum of AD and DLB and in layer 3 of the entorhinal cortex of DLB. In contrast, the intensity of alpha7 reactive neuropil was significantly higher in AD than in controls or DLB in a number of areas of the hippocampus (CA3/4 and stratum granulosum), subiculum and entorhinal cortex. An increase in alpha7 immunoreactivity in AD was also associated with astrocytes. The number of astrocytes double-labelled with alpha7 and glial fibrillary acidic protein (GFAP) antibodies was increased in most areas of the hippocampus and entorhinal cortex in AD compared with controls and DLB. Increased astrocyte alpha7 nAChRs in AD may be

associated with **inflammatory** mechanisms related to degenerative processes specific to this disease.

CT Check Tags: Comparative Study; Female; Male
Aged
Aged, 80 and over
*Alzheimer Disease: ME, metabolism
Alzheimer Disease: PA, pathology
*Astrocytes: ME, metabolism
Brain: CY, cytology
Brain: ME, metabolism
Case-Control Studies
Cell Count: MT, methods
Glial Fibrillary Acidic Protein: ME, metabolism
Humans
Immunohistochemistry: MT, methods
*Lewy Body Disease: ME, metabolism
Lewy Body Disease: PA, pathology
*Neurons: ME, metabolism
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't

CN 0 (Glial Fibrillary Acidic Protein); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 6 OF 13 MEDLINE on STN
AN 2004436284 MEDLINE
DN PubMed ID: 15342104
TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.
AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F
CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.
SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
Journal code: 7605818. ISSN: 0361-9230.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200411
ED Entered STN: 20040903
Last Updated on STN: 20041219
Entered Medline: 20041129

AB Chronic brain **inflammation** is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunological activation of brain mononuclear phagocyte cells, called microglia. This **inflammatory** mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) **inflammation.** However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-**inflammatory** pathway regulates systemic **inflammatory** response by way of acetylcholine acting at the **alpha7 nicotinic** acetylcholine receptor (alpha7nAChR) found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-**inflammatory** properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN-gamma and the HIV-1 coat glycoprotein, gp120. Furthermore, this activation, as measured by TNF-alpha and nitric oxide (NO) release, is synergistically attenuated through the alpha7 nAChR and p44/42 MAPK system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic

combination to treat or prevent the onset of HAD through this modulation of the microglia **inflammatory** mechanism.

CT Check Tags: Comparative Study
Analysis of Variance
Animals
Animals, Newborn
Blotting, Western: MT, methods
Cells, Cultured
Cerebral Cortex: CY, cytology
Cholinesterase Inhibitors: PD, pharmacology
Drug Synergism
Enzyme-Linked Immunosorbent Assay: MT, methods
*Galantamine: PD, pharmacology
*HIV Envelope Protein gp120: PD, pharmacology
Interferon Type II: ME, metabolism
Mice
*Microglia: DE, drug effects
Microglia: ME, metabolism
Mitogen-Activated Protein Kinase 1: ME, metabolism
Mitogen-Activated Protein Kinase 3: ME, metabolism
*Nicotine: PD, pharmacology
*Nicotinic Agonists: PD, pharmacology
Nitric Oxide: ME, metabolism
Research Support, Non-U.S. Gov't
Time Factors
Tumor Necrosis Factor-alpha: ME, metabolism

RN 10102-43-9 (Nitric Oxide); 357-70-0 (Galantamine); 54-11-5 (Nicotine); 82115-62-6 (Interferon Type II)

CN 0 (Cholinesterase Inhibitors); 0 (HIV Envelope Protein gp120); 0 (Nicotinic Agonists); 0 (Tumor Necrosis Factor-alpha); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 1); EC 2.7.1.37 (Mitogen-Activated Protein Kinase 3)

L7 ANSWER 7 OF 13 MEDLINE on STN

AN 2004163757 MEDLINE

DN PubMed ID: 15056277

TI Cholinergic modulation of microglial activation by **alpha 7 nicotinic** receptors.

AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun

CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medciine, Tampa, Florida, USA.

SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200405

ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

AB Almost all degenerative diseases of the CNS are associated with chronic **inflammation.** A central step in this process is the activation of brain mononuclear phagocyte cells, called microglia. While it is recognized that healthy neurons and astrocytes regulate the magnitude of microglia-mediated innate immune responses and limit excessive CNS **inflammation**, the endogenous signals governing this process are not fully understood. In the peripheral nervous system, recent studies suggest that an endogenous 'cholinergic anti-**inflammatory** pathway' regulates systemic **inflammatory** responses via **alpha 7 nicotinic** acetylcholinergic receptors (nAChR) found on blood-borne macrophages. These data led us to investigate whether a similar cholinergic pathway exists in the brain that

could regulate microglial activation. Here we report for the first time that cultured microglial cells express alpha 7 nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochemistry analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced TNF-alpha release in murine-derived microglial cells, an effect attenuated by **alpha 7** selective **nicotinic** antagonist, alpha-bungarotoxin. Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, our findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through **alpha 7 nicotinic** receptors. Negative regulation of microglia activation may also represent additional mechanism underlying nicotine's reported neuroprotective properties.

CT *Acetylcholine: PD, pharmacology
Animals
Bungarotoxins: PD, pharmacology
Cells, Cultured
Lipopolysaccharides: PD, pharmacology
Mice
Mice, Inbred C57BL
Microglia: CY, cytology
*Microglia: DE, drug effects
*Microglia: ME, metabolism
Mitogen-Activated Protein Kinases: ME, metabolism
Nicotine: PD, pharmacology
Nicotinic Antagonists: PD, pharmacology
Phosphorylation: DE, drug effects
Receptors, Nicotinic: DE, drug effects
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't
Signal Transduction: DE, drug effects
Tumor Necrosis Factor-alpha: ME, metabolism
p38 Mitogen-Activated Protein Kinases

RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)

CN 0 (Bungarotoxins); 0 (Lipopolysaccharides); 0 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor); EC 2.7.1.37 (Mitogen-Activated Protein Kinases); EC 2.7.1.37 (p38 Mitogen-Activated Protein Kinases)

L7 ANSWER 8 OF 13 MEDLINE on STN

AN 2003509329 MEDLINE

DN PubMed ID: 14506129

TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.

AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel

CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.

SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
Journal code: 9208958. ISSN: 0964-6906.

CY England: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200407

ED Entered STN: 20031031
Last Updated on STN: 20040709
Entered Medline: 20040708

AB Mal de Meleda is an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation

or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human **alpha 7 nicotinic** acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of TNF-alpha release by macrophages during wound healing. This explains both the hyperproliferative as well as the **inflammatory** clinical phenotype of Mal de Meleda.

CT Check Tags: Female
Acetylcholine: ME, metabolism
Amino Acid Sequence
Animals
Antigens, Ly: CH, chemistry
*Antigens, Ly: GE, genetics
Antigens, Ly: IP, isolation & purification
Antigens, Ly: PD, pharmacology
Cell Line
Cell Nucleus: ME, metabolism
Clone Cells
DNA, Complementary: AD, administration & dosage
DNA, Complementary: ME, metabolism
Dose-Response Relationship, Drug
*Epidermis: ME, metabolism
Genes, Recessive
Humans
*Keratoderma, Palmoplantar: GE, genetics
Keratoderma, Palmoplantar: ME, metabolism
Keratoderma, Palmoplantar: PA, pathology
Microinjections
Models, Molecular
Moths: CY, cytology
Mutation
*Neurotransmitters: ME, metabolism
Oocytes: ME, metabolism
Patch-Clamp Techniques
Peptides: CH, chemistry
Peptides: GE, genetics
Peptides: ME, metabolism
Phenotype
Protein Structure, Tertiary
Receptors, Cholinergic: DE, drug effects
Receptors, Cholinergic: ME, metabolism
Recombinant Proteins: IP, isolation & purification
Recombinant Proteins: ME, metabolism
Research Support, Non-U.S. Gov't
Urinary Plasminogen Activator: CH, chemistry
*Urinary Plasminogen Activator: GE, genetics
Urinary Plasminogen Activator: IP, isolation & purification
Urinary Plasminogen Activator: PD, pharmacology
Xenopus laevis: PH, physiology

RN 51-84-3 (Acetylcholine)

CN 0 (ARS protein, human); 0 (Antigens, Ly); 0 (DNA, Complementary); 0 (Neurotransmitters); 0 (Peptides); 0 (Receptors, Cholinergic); 0 (Recombinant Proteins); EC 3.4.21.73 (Urinary Plasminogen Activator)

L7 ANSWER 9 OF 13 MEDLINE on STN

AN 2003115931 MEDLINE

DN PubMed ID: 12628466

TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.

AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki

CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.

SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404
AB The brains in patients with Alzheimer's disease show chronic **inflammatory** responses characterized by activated glial cells and increased expression of cytokines. It is of interest to determine whether acetylcholine (ACh) affects Abeta-induced cytokine expression in the glial cells. Since it has been shown that **alpha7** subunits of **nicotinic** ACh receptors are expressed in glial cells and that Abeta(1-42) binds to **alpha7**, we examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Abeta-induced TNF-alpha expression in mouse glial cells. We did not observe any regulatory effects of ACh on Abeta-induced TNF-alpha transcription in the glial cells. We discuss the pathophysiological roles of ACh in glial cells in the brains of patients with Alzheimer's disease.

CT *Acetylcholine: PD, pharmacology
*Amyloid beta-Protein: PD, pharmacology
Animals
Carbachol: PD, pharmacology
Cells, Cultured
Glyceraldehyde-3-Phosphate Dehydrogenases: ME, metabolism
Inflammation: PA, pathology
Mice
Muscarinic Agonists: PD, pharmacology
Neuroglia: DE, drug effects
*Neuroglia: ME, metabolism
Nicotine: PD, pharmacology
Nicotinic Agonists: PD, pharmacology
Oxotremorine: PD, pharmacology
*Peptide Fragments: PD, pharmacology
Reverse Transcriptase Polymerase Chain Reaction
*Tumor Necrosis Factor-alpha: BI, biosynthesis
RN 51-83-2 (Carbachol); 51-84-3 (Acetylcholine); 54-11-5 (Nicotine); 70-22-4 (Oxotremorine)
CN 0 (Amyloid beta-Protein); 0 (Muscarinic Agonists); 0 (Nicotinic Agonists); 0 (Peptide Fragments); 0 (Tumor Necrosis Factor-alpha); 0 (amyloid beta-protein (1-42)); EC 1.2.1.- (Glyceraldehyde-3-Phosphate Dehydrogenases)

L7 ANSWER 10 OF 13 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI **Nicotinic** acetylcholine receptor **alpha7** subunit is an essential regulator of **inflammation.**
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307
AB Excessive **inflammation** and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, rheumatoid arthritis and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation.** The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic **inflammatory** responses. This physiological mechanism, termed the 'cholinergic anti-**inflammatory** pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the **nicotinic** acetylcholine receptor **alpha7** subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in alpha7-deficient mice. Thus, the **nicotinic** acetylcholine receptor **alpha7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.
CT Check Tags: Female; Male
Acetylcholine: PD, pharmacology
Aging: PH, physiology
Animals
Bungarotoxins: ME, metabolism
Cells, Cultured
Electric Stimulation
Endotoxemia: GE, genetics
Endotoxemia: ME, metabolism
Humans
Inflammation: GE, genetics
***Inflammation: ME, metabolism**
Macrophages, Peritoneal: DE, drug effects
*Macrophages, Peritoneal: ME, metabolism
Mice
Mice, Inbred C57BL
Mice, Knockout
Nicotine: PD, pharmacology
Protein Subunits: GE, genetics
Protein Subunits: ME, metabolism
RNA, Messenger: GE, genetics
RNA, Messenger: ME, metabolism
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
*Tumor Necrosis Factor-alpha: ME, metabolism
Vagus Nerve: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-bungarotoxin receptor)

L7 ANSWER 11 OF 13 MEDLINE on STN
AN 2003003464 MEDLINE
DN PubMed ID: 12509811
TI Alzheimer's disease is associated with a selective increase in **alpha7 nicotinic** acetylcholine receptor immunoreactivity in astrocytes.
AU Teaktong Thanasak; Graham Alison; Court Jennifer; Perry Robert; Jaros

Evelyn; Johnson Mary; Hall Ros; Perry Elaine
CS MRC Building, Centre Development in Clinical Brain Aging, Newcastle General Hospital, Newcastle Upon Tyne, UK.
SO Glia, (2003 Jan 15) 41 (2) 207-11.
Journal code: 8806785. ISSN: 0894-1491.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030103
Last Updated on STN: 20030403
Entered Medline: 20030402
AB Alzheimer's disease (AD) and dementia with Lewy bodies (DLB) are common forms of dementia in the elderly associated with cholinergic dysfunction, including reductions in nicotinic acetylcholine receptors (nAChRs). In AD, astrocytes are implicated in the formation of senile plaques, one of the core pathological features. Using immunohistochemistry, we have investigated astrocytic expression of the two major **nicotinic** receptor alpha subunits in the human hippocampus and entorhinal cortex. **alpha7**, but not alpha4, subunit immunoreactivity was associated with astrocytes. An increase in the proportion of astrocytes expressing alpha7 immunoreactivity was observed in AD compared with age-matched controls. A similar increase was not evident in DLB. Elevated alpha7 nAChRs on astrocytes in AD may contribute to alterations in calcium homeostasis and nitric oxide production, which in turn could affect beta-amyloid-mediated **inflammatory** processes in AD.

CT Aged
Aged, 80 and over
*Alzheimer Disease: ME, metabolism
Alzheimer Disease: PA, pathology
Alzheimer Disease: PP, physiopathology
Astrocytes: CY, cytology
*Astrocytes: ME, metabolism
Calcium: ME, metabolism
*Entorhinal Cortex: ME, metabolism
Entorhinal Cortex: PA, pathology
Entorhinal Cortex: PP, physiopathology
*Hippocampus: ME, metabolism
Hippocampus: PA, pathology
Hippocampus: PP, physiopathology
Homeostasis: PH, physiology
Humans
Immunohistochemistry
Lewy Body Disease: ME, metabolism
Lewy Body Disease: PA, pathology
Lewy Body Disease: PP, physiopathology
Nitric Oxide: ME, metabolism
*Receptors, Nicotinic: ME, metabolism
Research Support, Non-U.S. Gov't
Senile Plaques: ME, metabolism
*Up-Regulation: PH, physiology
RN 10102-43-9 (Nitric Oxide); 7440-70-2 (Calcium)
CN 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor); 0 (nicotinic acetylcholine receptor alpha4 subunit)

L7 ANSWER 12 OF 13 MEDLINE on STN
AN 2002144978 MEDLINE
DN PubMed ID: 11790724
TI Selective activation of central subtypes of the nicotinic acetylcholine receptor has opposite effects on neonatal excitotoxic brain injuries.
AU Laudenbach Vincent; Medja Fadia; Zoli Michele; Rossi Francesco M; Evrard Philippe; Changeux Jean-Pierre; Gressens Pierre
CS Laboratoire de Neurologie du Developpement, INSERM E9935, Hopital Robert

Debre, Paris, France.. vlaudenb@infobiogen.fr
SO FASEB journal : official publication of the Federation of American Societies for Experimental Biology, (2002 Mar) 16 (3) 423-5. Electronic Publication: 2002-01-14.
Journal code: 8804484. ISSN: 1530-6860.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 20020307
Last Updated on STN: 20030105
Entered Medline: 20020319
AB The incidence of neurological disabilities ascribable to perinatal injury is rising in Western countries, raising ethical and financial problems. No curative treatments are available. The pathophysiology of brain lesions of hypoxic-ischemic or **inflammatory** origin involves various neurotransmitters or neuromodulators. Among these, glutamate plays a key role. By overactivating N-methyl-D-aspartate receptors, it triggers the excitotoxic cascade. Although addictive, nicotine prevents excitotoxic neuronal death in adult animals. Its potential neuroprotective effects have not been evaluated in neonates. We found that nicotine is neuroprotective in vivo, in a murine model of neonatal excitotoxic brain injury, and in vitro, in primary cultures of cortical neurons. We investigated the respective roles in nicotine-related neuroprotection of the two dominant **nicotinic** acetylcholine receptor (nAChR) isoforms, namely, alpha4beta2 (heteropentameric) and **alpha7** (homopentameric). Inhibition of alpha4beta2, either pharmacological (i.e., an alpha4beta2 nAChR antagonist) or molecular (beta2-/- knockout mice), abolished the protective effect of nicotine in vivo and in vitro, suggesting the involvement of alpha4beta2 nAChR in neonatal nicotine-related neuroprotection. In contrast, activation of alpha7 nAChR, which is protective in adult animals, was deleterious in our neonatal model, whereas its blockade, either pharmacological or molecular (alpha7-/- knockout mice) provided neuroprotection. Neuroprotective strategies must consider these opposite properties of distinct nAChR isoforms in neonates.
CT Animals
Animals, Newborn
Autoradiography
Brain Diseases: CI, chemically induced
Brain Diseases: ME, metabolism
*Brain Diseases: PA, pathology
Cell Death: DE, drug effects
Cells, Cultured
Cerebral Cortex: DE, drug effects
Cerebral Cortex: GD, growth & development
Cerebral Cortex: PA, pathology
Excitatory Amino Acid Agonists: AD, administration & dosage
Excitatory Amino Acid Agonists: PD, pharmacology
Ibotenic Acid: AD, administration & dosage
Ibotenic Acid: AI, antagonists & inhibitors
Injections
Mice
Mice, Inbred C57BL
Mice, Knockout
Models, Neurological
N-Methylaspartate: ME, metabolism
Neurons: DE, drug effects
Neurons: PA, pathology
Neuroprotective Agents: PD, pharmacology
Nicotine: PD, pharmacology
Nicotinic Antagonists: PD, pharmacology
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism

*Receptors, Nicotinic: PH, physiology
RN 2552-55-8 (Ibotenic Acid); 54-11-5 (Nicotine); 6384-92-5 (N-Methylaspartate)
CN 0 (Excitatory Amino Acid Agonists); 0 (Neuroprotective Agents); 0 (Nicotinic Antagonists); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor); 0 (nicotinic receptor alpha4beta2)

L7 ANSWER 13 OF 13 MEDLINE on STN
AN 2001464060 MEDLINE
DN PubMed ID: 11509192
TI Chronic corticosterone treatment alters sensory gating in C3H mice.
AU Stevens K E; Bullock A E; Collins A C
CS Department of Psychiatry, C268-71, University of Colorado Health Sciences Center, 4200 East 9th Avenue, Denver, CO 80262, USA.. stevensk@den-res.org
NC DA00197 (NIDA)
DA03194 (NIDA)
MH51931 (NIMH)
SO Pharmacology, biochemistry, and behavior, (2001 Jul-Aug) 69 (3-4) 359-66. Journal code: 0367050. ISSN: 0091-3057.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200112
ED Entered STN: 20010820
Last Updated on STN: 20020122
Entered Medline: 20011204
AB Two methods of evaluating inhibitory sensory processing are prepulse inhibition of acoustic startle (PPI) and gating of auditory evoked potentials. Studies using both methods suggest **nicotinic** acetylcholinergic receptor modulation of gating, specifically the alpha-bungarotoxin (alpha-BTX) binding site (**alpha7** receptor subtype). However, recent assessment of alpha7 null mutant mice failed to demonstrate any effect of the loss of this receptor in either gating paradigm. An alternate approach to assessing the effects of the alpha7 receptor is to reduce its numbers in mature inbred mice, thus, avoiding the twin problems of background and developmental compensation inherent in null mutant mouse studies. Numerous studies have shown that chronic corticosterone (CCS) treatment selectively reduces alpha-BTX binding sites. C3H mice were adrenalectomized and implanted with corticosterone or cholesterol (control) pellets. After 8 days, they were tested in one of the gating paradigms. PPI and auditory gating were significantly diminished in corticosterone-treated mice concomitant with a reduction in alpha-BTX binding in several brain regions. Cholesterol-treated mice had no change in either paradigm. Nicotine treatment (1 mg/kg) produced significant improvement in both paradigms in corticosterone-treated mice. These data agree with previous pharmacological studies suggesting modulation of gating occurs through a nicotinic receptor.
CT Check Tags: Male
Acoustic Stimulation: MT, methods
Animals
***Anti-Inflammatory Agents: PD, pharmacology**
Brain: ME, metabolism
Bungarotoxins: ME, metabolism
*Corticosterone: PD, pharmacology
Drug Implants
*Evoked Potentials, Auditory: DE, drug effects
Evoked Potentials, Auditory: PH, physiology
Mice
Mice, Inbred C3H
Mice, Mutant Strains
Nicotine: PD, pharmacology
Nicotinic Agonists: PD, pharmacology
Receptors, Nicotinic: DF, deficiency
Research Support, U.S. Gov't, P.H.S.

*Startle Reaction: DE, drug effects
Startle Reaction: PH, physiology
RN 50-22-6 (Corticosterone); 54-11-5 (Nicotine)
CN 0 (Anti-**Inflammatory** Agents); 0 (Bungarotoxins); 0 (Drug Implants); 0 (Nicotinic Agonists); 0 (Receptors, Nicotinic); 0 (alpha-bungarotoxin receptor)

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FULL ESTIMATED COST	9.02	13.36

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FULL ESTIMATED COST	0.18	13.54

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=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic and inflamm? and (tumor necrosis factor or tnf)

```
        257 ALPHA7
    1538591 ALPHA
    2538498 7
       5868 ALPHA-7
              (ALPHA(W)7)
    1538591 ALPHA
    2538498 7
       5868 ALPHA 7
              (ALPHA(W)7)
      34587 NICOTINIC
       1097 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC
     213143 INFLAMM?
     335796 TUMOR
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        101219 NECROSIS
        893137 FACTOR
         55469 TUMOR NECROSIS FACTOR
                 (TUMOR(W)NECROSIS(W)FACTOR)
         54228 TNF
L8          12 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC AND INFLAMM? AND
               (TUMOR NECROSIS FACTOR OR TNF)

=> d 1-12 all

L8   ANSWER 1 OF 12  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2005:363636  CAPLUS
ED   Entered STN:  28 Apr 2005
TI   Activation of .alpha.7 nicotinic
     acetylcholine receptor by nicotine selectively up-regulates
     cyclooxygenase-2 and prostaglandin E2 in rat microglial cultures
AU   De Simone, Roberta; Ajmone-Cat, Maria Antonietta; Carnevale, Daniela;
     Minghetti, Luisa
CS   Department of Cell Biology and Neurosciences, Section of Degenerative and
     Inflammatory Neurological Diseases, Istituto Superiore di Sanita, Rome,
     Italy
SO   Journal of Neuroinflammation (2005), 2, No pp. given
     CODEN: JNOEB3; ISSN: 1742-2094
     URL: http://www.jneuroinflammation.com/content/pdf/1742-2094-2-4.pdf
PB   BioMed Central Ltd.
DT   Journal; (online computer file)
LA   English
CC   2 (Mammalian Hormones)
AB   Background: Nicotinic acetylcholine (Ach) receptors are ligand-gated
     pentameric ion channels whose main function is to transmit signals for the
     neurotransmitter Ach in peripheral and central nervous system. However,
     the .alpha.7 nicotinic receptor has been
     recently found in several non-neuronal cells and described as an important
     regulator of cellular function. Nicotine and ACh have been recently
     reported to inhibit tumor necrosis factor
     -α ( TNF-α) production in human macrophages as well as in
     mouse microglial cultures. In the present study, we investigated whether
     the stimulation of .alpha.7 nicotinic
     receptor by the specific agonist nicotine could affect the functional
     state of activated microglia by promoting and/or inhibiting the release of
     other important proinflammatory and lipid mediator such as prostaglandin
     E2. Methods: Expression of .alpha.7 nicotinic
     receptor in rat microglial cell was examined by RT-PCR, immunofluorescence
     staining and Western blot. The functional effects of α7 receptor
     activation were analyzed in resting or lipopolysaccharide (LPS) stimulated
     microglial cells pre-treated with nicotine. Culture media were assayed
     for the levels of tumor necrosis factor,
     interleukin-1β, nitric oxide, interleukin-10 and prostaglandin E2.
     Total RNA was assayed by RT-PCR for the expression of COX-2 mRNA.
     Results: Rat microglial cells express .alpha.7
     nicotinic receptor, and its activation by nicotine
     dose-dependently reduces the LPS-induced release of TNF-α,
     but has little or no effect on nitric oxide, interleukin-10 and
     interleukin-1β. By contrast, nicotine enhances the expression of
     cyclooxygenase-2 and the synthesis of one of its major products,
     prostaglandin E2. Conclusions: Since prostaglandin E2 modulates several
     macrophage and lymphocyte functions, which are instrumental for
     inflammatory resolution, our study further supports the existence of
     a brain cholinergic antiinflammatory pathway mediated by α
     7 nicotinic receptor that could be potentially exploited
     for novel treatments of several neuropathologies in which local
     inflammation, sustained by activated microglia, plays a crucial
     role.

L8   ANSWER 2 OF 12  CAPLUS  COPYRIGHT 2005 ACS on STN
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AN 2005:311613 CAPLUS
ED Entered STN: 12 Apr 2005
TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during **inflammation**
AU Saeed, Rubina W.; Varma, Santosh; Peng-Nemeroff, Tina; Sherry, Barbara; Balakhaneh, David; Huston, Jared; Tracey, Kevin J.; Al-Abed, Yousef; Metz, Christine N.
CS Laboratory of Medicinal Biochemistry, Institute for Medical Research at North Shore-LIJ, Manhasset, NY, 11030, USA
SO Journal of Experimental Medicine (2005), 201(7), 1113-1123
CODEN: JEMEAV; ISSN: 0022-1007
PB Rockefeller University Press
DT Journal
LA English
CC 2 (Mammalian Hormones)
AB Endothelial cell activation plays a critical role in regulating leukocyte recruitment during **inflammation** and infection. Based on recent studies showing that acetylcholine and other cholinergic mediators suppress the production of proinflammatory cytokines via the α **7 nicotinic** acetylcholine receptor (α 7 nAChR) expressed by macrophages and our observations that human microvascular endothelial cells express the **.alpha.7** nAChR, we examined the effect of cholinergic stimulation on endothelial cell activation in vitro and in vivo. Using the Shwartzman reaction, we observed that nicotine (2 mg/kg) and the novel cholinergic agent CAP55 (12 mg/kg) inhibit endothelial cell adhesion mol. expression. Using endothelial cell cultures, we observed the direct inhibitory effects of acetylcholine and cholinergic agents on **tumor necrosis factor** (**TNF**)-induced endothelial cell activation. Mecamylamine, an nAChR antagonist, reversed the inhibition of endothelial cell activation by both cholinergic agonists, confirming the antiinflammatory role of the nAChR cholinergic pathway. In vitro mechanistic studies revealed that nicotine blocked **TNF**-induced nuclear factor-κB nuclear entry in an inhibitor κB (IκB)α- and IκBε-dependent manner. Finally, with the carrageenan air pouch model, both vagus nerve stimulation and cholinergic agonists significantly blocked leukocyte migration in vivo. These findings identify the endothelium, a key regulator of leukocyte trafficking during **inflammation**, as a target of anti-**inflammatory** cholinergic mediators.
RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L8 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:907341 CAPLUS
DN 141:374660
ED Entered STN: 31 Oct 2004
TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis
AU Wang, Hong; Liao, Hong; Ochani, Mahendar; Justiniani, Marilou; Lin, Xinchun; Yang, Lihong; Al-Abed, Yousef; Wang, Haichao; Metz, Christine; Miller, Edmund J.; Tracey, Kevin J.; Ulloa, Luis
CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, Manhasset, NY, 11030, USA
SO Nature Medicine (New York, NY, United States) (2004), 10(11), 1216-1221
CODEN: NAMEFI; ISSN: 1078-8956
PB Nature Publishing Group
DT Journal
LA English
CC 1-11 (Pharmacology)
Section cross-reference(s): 2
AB Physiol. anti-**inflammatory** mechanisms can potentially be exploited for the treatment of **inflammatory** disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or **tumor necrosis factor**-alpha (**TNF**-α). **Nicotinic** stimulation prevents activation of the NF-κB pathway and inhibits HMGB1 secretion through a specific ' **nicotinic** anti-**inflammatory** pathway' that requires the . **alpha.7 nicotinic** acetylcholine receptor (α7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in exptl. models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiol. inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the α7nAChR might have therapeutic potential for the treatment of sepsis.
ST cholinergic agonist nicotine acetylcholine HMGB1 sepsis antiinflammatory
IT High-mobility group proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)

(HMG1; cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
IT Transcription factors
RL: MSC (Miscellaneous)
(NF-κB (nuclear factor of κ light chain gene enhancer in B-cells); cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
IT Anti-**inflammatory** agents
Cholinergic agonists
Human
Macrophage
Sepsis
(cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α **7**; cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
IT 54-11-5, Nicotine
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
IT 51-84-3, Acetylcholine, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L8 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:733565 CAPLUS
DN 142:127318
ED Entered STN: 09 Sep 2004
TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120
AU Giunta, B.; Ehrhart, J.; Townsend, K.; Sun, N.; Vendrame, M.; Shytle, D.; Tan, J.; Fernandez, F.
CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, Tampa, FL, 33613, USA
SO Brain Research Bulletin (2004), 64(2), 165-170
CODEN: BRBUDU; ISSN: 0361-9230
PB Elsevier Inc.
DT Journal
LA English
CC 1-11 (Pharmacology)
AB Chronic brain **inflammation** is the common final pathway in the majority of neurodegenerative diseases and central to this phenomenon is the immunol. activation of brain mononuclear phagocyte cells, called microglia. This **inflammatory** mechanism is a central component of HIV-associated dementia (HAD). In the healthy state, there are endogenous signals from neurons and astrocytes, which limit excessive central nervous system (CNS) **inflammation.** However, the signals controlling this process have not been fully elucidated. Studies on the peripheral nervous system suggest that a cholinergic anti-**inflammatory** pathway regulates systemic **inflammatory** response by way of acetylcholine acting at the **.alpha.7 nicotinic** acetylcholine receptor (α7nAChR) found on blood-borne macrophages. Recent data from our laboratory indicates that cultured microglial cells also express this same receptor and that microglial anti-**inflammatory** properties are mediated through it and the p44/42 mitogen-activated protein kinase (MAPK) system. Here we report for the first time the creation of an in vitro model of HAD composed of cultured microglial cells synergistically activated by the addition of IFN-γ and the HIV-1 coat glycoprotein, gp120. Furthermore, this activation, as measured by **TNF**-α and nitric oxide (NO) release, is synergistically attenuated through the α7 nAChR and p44/42 MAPK system by pretreatment with nicotine, and the cholinesterase inhibitor, galantamine. Our findings suggest a novel therapeutic combination to treat or prevent the onset of HAD through this modulation of the microglia **inflammatory** mechanism.
ST nicotine galantamine synergistic drug interaction microglial activation HIV1 dementia
IT Drug targets
Nicotinic antagonists
(co-pretreatment of mouse primary microglial cell with α 7nAChR inhibitor α-bungarotoxin reduced nicotine, galantamine inhibition on **TNF**-α production, NO release induced by HIV-1 gp120/IFN-γ and reduced p44/42 MAPK phosphorylation)
IT Anti-**inflammatory** agents
Human immunodeficiency virus 1
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO

release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT Mental disorder
(dementia; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced HAD-like microglial activation through inhibiting α7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT Drug interactions
(synergistic; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α **7**; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT Interferons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(γ; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT 11032-79-4, α-Bungarotoxin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment of mouse primary microglial cell with α 7nAChR inhibitor α-bungarotoxin reduced nicotine, galantamine inhibition on **TNF**-α production, NO release induced by HIV-1 gp120/IFN-γ and reduced p44/42 MAPK phosphorylation)

IT 9001-08-5, Cholinesterase 10102-43-9, Nitric oxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT 54-11-5, Nicotine 357-70-0, Galantamine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

IT 142243-02-5
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(p44/42; co-pretreatment with nicotine and galantamine synergistically reduced HIV-1 gp120/IFN-γ-induced **TNF**-α production and NO release through inhibiting α 7nAChR and phosphorylation of p44/42 MAPK in mouse primary culture microglial cells)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L8 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:633526 CAPLUS
DN 141:167817
ED Entered STN: 06 Aug 2004
TI Treatment of diseases with alpha-7 NACh receptor full agonists
IN Groppi, Vincent Edward, Jr.; Rogers, Bruce Nelsen; Rudmann, Daniel Gregory
PA Pharmacia & Upjohn Company, USA
SO PCT Int. Appl., 142 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-439
ICS A61P009-10; A61P019-02
CC 1-11 (Pharmacology)
Section cross-reference(s): 28
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004064836	A2	20040805	WO 2004-IB115	20040112
	WO 2004064836	A3	20041223		

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ

PRAI US 2003-441801P P 20030122
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004064836	ICM	A61K031-439
	ICS	A61P009-10; A61P019-02

OS MARPAT 141:167817
AB The present invention relates to compositions and methods to treat diseases or conditions with **alpha-7 nicotinic** acetylcholine receptor (AChR) full agonists by decreasing levels of **tumor necrosis factor**-alpha and/or by stimulating vascular angiogenesis.
ST nicotinic acetylcholine receptor agonist quinuclidinylheteroarylamide cancer diabetes angiogenesis therapy
IT **Inflammation**
(Crohn's disease; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Intestine, disease
(Crohn's; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Mammary gland, neoplasm
(Paget's disease; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Bone, disease

(Paget's; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Arthritis
(Reiter's syndrome; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Leukemia
(acute myelogenous; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Respiratory distress syndrome
(adult; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Heart, disease
(angina pectoris, stable; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Cachexia
(cancerous; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Ischemia
(cardiac; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Malaria
(cerebral; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Leukemia
(chronic myelocytic; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Dermatitis
(contact; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Muscle, disease
(degeneration; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Bone, disease
(fracture; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Infection
(herpes zoster; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Intestine, disease
(**inflammatory**; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Reperfusion
(injury; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Autoimmune disease
(insulin-dependent diabetes mellitus; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Diabetes mellitus
(insulin-dependent; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Heart, disease
(ischemia; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Brain, disease
(malaria; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Muscle, disease
Pain
(myalgia; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Diabetes mellitus
(non-insulin-dependent; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)
IT Adenoviridae

Analgesics
Anaphylaxis
Angiogenesis
Anti-**inflammatory** agents
Antibacterial agents
Antidiabetic agents
Antiemetics
Antitumor agents
Antiviral agents
Asthma
Atherosclerosis
Burn
Cytomegalovirus
Fever and Hyperthermia
Gout
Human
Human herpesvirus
Human immunodeficiency virus 1
Human immunodeficiency virus 2
Human immunodeficiency virus 3
Infection
Inflammation
Influenza
Ischemia
Mammalia
Multiple myeloma
Multiple sclerosis
Osteoarthritis
Osteoporosis
Pain
Psoriasis
Rheumatoid arthritis
Sepsis
Surgery
Transplant rejection
Wound healing
(preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Injury
(reperfusion; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Bone
(resorption; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT **Inflammation**
Nose, disease
(rhinitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Shock (circulatory collapse)
(septic; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT **Inflammation**
Spinal column, disease
(spondylitis, rheumatoid; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Brain, disease
(stroke; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Shock (circulatory collapse)
(toxic shock syndrome; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Brain, disease
(trauma; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT **Inflammation**

Intestine, disease
(ulcerative colitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Eye, disease
Inflammation
(uveitis; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7, agonists; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT Pancreatic islet of Langerhans
(β-cell; preparation of quinuclidinylheteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 50-47-5, Desipramine 51-64-9, Dextroamphetamine 72-69-5, Nortriptyline 113-45-1, Methyl phenidate 300-62-9, Amphetamine 2152-34-3, Pemoline 34911-55-2, Bupropion 54910-89-3, Fluoxetine 68693-11-8, Modafinil 71620-89-8, Reboxetine 83015-26-3, Atomoxetine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(combination therapy; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-29-8P, trans-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 500556-92-3P
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-30-1P, (+)-trans-3-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 473795-31-2P, (-)-trans-3-(tert-Butoxycarbonylamino)-4-(2-hydroxyethyl)-1-(phenylmethyl)pyrrolidine 500556-94-5P 500556-95-6P
RL: PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 272-23-1P, Thieno[2,3-b]pyridine 704-91-6P, 1H-Indazole-6-carboxylic acid 1073-31-0P, 3,4-Thiophenedicarboxaldehyde 1074-99-3P, 2,4-Dimethyl-5-nitropyridine 1851-22-5P, 3-Chloropyridine 1-oxide 4442-54-0P, 2,3-Dihydro-1,4-benzodioxine-6-carboxylic acid 5832-38-2P, 2-Formyl-4-methyl-5-nitropyridine 6624-49-3P, 3-Isoquinolinecarboxylic acid 7040-07-5P, Furan-2,3-dicarboxaldehyde 7137-33-9P, Benzo[b]thiophene-2,3-dicarboxaldehyde 13452-14-7P 14757-78-9P 15112-41-1P, 1,3-Benzoxazole-5-carboxylic acid 18853-32-2P, 3,4-Dicyanothiophene 19005-93-7P, 1H-Indole-2-carboxaldehyde 21344-31-0P, Thieno[2,3-b]pyridine-5-carbonitrile 21472-88-8P, Ethyl 5-hydroxy-6-oxo-1,2,3,6-tetrahydropyridine-4-carboxylate 21473-14-3P 21473-16-5P, exo-1-Azabicyclo[2.2.1]heptan-3-ol 21492-03-5P, cis-4-(Hydroxymethyl)piperidin-3-ol 23680-40-2P, Methyl 3-bromopropiolate 24621-70-3P, 1H-Indole-2-methanol 25557-50-0P, Thieno[2,3-b]pyridine-7-oxide 28872-85-7P, 2-(3-Bromo-2-furyl)-1,3-dioxolane 34668-25-2P, Ethyl furo[2,3-b]pyridine-2-carboxylate 34668-26-3P, Furo[2,3-b]pyridine-2-carboxylic acid 35350-37-9P 36404-88-3P, 2-Chloronicotinaldehyde 38180-46-0P, 3-Chloropyridine-2-carbonitrile 40789-79-5P, 2-(Benzoyloxy)-1-nitroethane 56538-57-9P, [[(Benzyloxy)carbonyl]amino](hydroxy)acetic acid 58123-77-6P, 3-Hydroxy-4-iodobenzoic acid 58237-86-8P 58621-52-6P, 1-(3,4-Dihydro-2H-chromen-6-yl)ethanone 59944-76-2P, Thieno[2,3-b]pyridine-2-carboxylic acid 60249-08-3P, Thieno[2,3-c]pyridine-5-carboxylic acid 60249-09-4P, Thieno[3,2-c]pyridine-6-carboxylic acid 65140-15-0P, 2-Aminothiophene hexachlorostannate 65898-38-6P, 5-Indancarboxylic acid 68867-17-4P, 1,3-Benzothiazole-5-carboxylic acid 72990-37-5P, 3-Chloroisonicotinaldehyde 74214-62-3P, Ethyl 9H-β-carboline-3-

carboxylate 76429-73-7P, 2,3-Dihydrobenzofuran-5-carboxylic acid 86236-37-5P, Thieno[3,2-c]pyridine-2-carboxylic acid 86344-86-7P, Thieno[2,3-b]pyridine-6-carbonitrile 88568-95-0P 89524-99-2P 90322-32-0P 90721-27-0P, Benzofuran-5-carboxylic acid 91486-39-4P, 4-(2-Chlorophenyl)-1H-pyrazole 94413-64-6P, Methyl 2-cyanoisonicotinate 94413-69-1P 103203-84-5P 107407-80-7P, Ethyl pyrrolo[1,2-c]pyrimidine-3-carboxylate 108763-47-9P, Methyl benzofuran-5-carboxylate 109274-83-1P, Ethyl 3-hydroxyfuro[2,3-b]pyridine-2-carboxylate 111042-90-1P, Methyl 3-aminothieno[3,2-b]pyridine-2-carboxylate 114077-82-6P, 4-Chloropyridine-3-carboxaldehyde 116538-95-5P, Thieno[3,2-b]pyridine-6-carbonitrile 117390-38-2P, Thieno[2,3-b]pyridine-5-carboxylic acid 117390-39-3P, Thieno[3,2-b]pyridine-6-carboxylic acid 119694-70-1P, 2-(1,3-Dioxolan-2-yl)-4-methyl-5-nitropyridine 129975-13-9P, trans-4-Nitro-1-(phenylmethyl)-3-pyrrolidineethanoic acid ethyl ester 130473-24-4P, 5-(1,3-Dioxolan-2-yl)-1H-pyrrolo[2,3-c]pyridine 130473-26-6P, 1H-Pyrrolo[2,3-c]pyridine-5-carboxaldehyde 130473-27-7P, 1H-Pyrrolo[2,3-c]pyridine-5-carboxylic acid 131489-60-6P, Ethyl (E)-4-(benzylamino)-2-butenoate 136117-69-6P 144017-84-5P, trans-4-Amino-1-(phenylmethyl)-3-pyrrolidineethanoic acid ethyl ester 153566-63-3P, (3R)-1-((S)-1-Phenethyl)-3-(cyanomethyl)pyrrolidine 153780-28-0P, Ethyl pyrrolo[1,2-a]pyrazine-3-carboxylate 154235-77-5P, 6-Benzoxazolecarboxylic acid 154650-88-1P, Methyl thieno[2,3-b]pyridine-2-carboxylate 156571-65-2P 157942-12-6P, Methyl 3-hydroxy-4-iodobenzoate 160893-70-9P 173340-19-7P, (3S)-1-((S)-1-Phenethyl)-5-oxo-3-pyrrolidinecarboxylic acid 173724-95-3P, (3S)-1-((S)-1-Phenethyl)-3-(hydroxymethyl)pyrrolidine 174676-79-0P, (3R)-Methyl 1-((S)-1-phenylethyl)pyrrolidine-3-acetate 181873-33-6P 191150-86-4P, Benzyl cis-3-hydroxy-4-[[[(4-methylphenyl)sulfonyl]oxy]methyl]piperidine-1-carboxylate 191150-87-5P, Benzyl cis-3-hydroxy-4-(hydroxymethyl)piperidine-1-carboxylate 197080-73-2P 206989-54-0P, tert-Butyl 4-(2-oxopropyl)piperidine-1-carboxylate 208519-37-3P, 2-Chloro-6-(hydroxymethyl)-4-iodo-3-pyridinol 208519-38-4P, 2-Chloro-6-(hydroxymethyl)-4-[(trimethylsilyl)ethynyl]-3-pyridinol 208519-39-5P, (7-Chlorofuro[2,3-c]pyridin-5-yl)methanol 208519-40-8P, 7-Chlorofuro[2,3-c]pyridine-5-carboxaldehyde 208519-41-9P, 2-Chloro-6-(hydroxymethyl)-3-pyridinol 221128-29-6P, trans-4-[[(1,1-Dimethylethoxy)carbonyl]amino]-1-(phenylmethyl)-3-pyrrolidineethanoic acid ethyl ester 253332-81-9P, Methyl thieno[2,3-c]pyridine-5-carboxylate 253332-82-0P, Methyl thieno[3,2-c]pyridine-6-carboxylate 280752-78-5P, (6-Bromo-2,3-dihydro-1,4-benzodioxin-2-yl)methanol 347187-30-8P, Thieno[3,2-b]pyridine-2-carboxylic acid 412023-64-4P 441044-90-2P, [7-Chloro-2-(trimethylsilyl)furo[2,3-c]pyridin-5-yl]methanol 473795-32-3P, exo-3-(tert-Butoxycarbonylamino)-1-azabicyclo[2.2.1]heptane 473795-33-4P, exo-3-Amino-1-azabicyclo[2.2.1]heptane bis(p-toluenesulfonate) 473795-35-6P, endo-3-Azido-1-azabicyclo[2.2.1]heptane 473795-36-7P, endo-3-Amino-1-azabicyclo[2.2.1]heptane bis(p-toluenesulfonate) 473795-39-0P, endo-1-Azabicyclo[3.2.1]octan-3-amine dihydrochloride 473795-40-3P, tert-Butyl 4-(2-oxopropylidene)piperidine-1-carboxylate 473795-43-6P, tert-Butyl 4-(3-bromo-2-oxopropyl)piperidine-1-carboxylate 473795-46-9P, 1-Bromo-3-(piperidin-4-yl)acetone trifluoroacetate 473795-47-0P, 1-Azabicyclo[3.2.2]nonan-3-one 478148-53-7P, 7-Chlorofuro[2,3-c]pyridine-5-carboxylic acid 478148-54-8P, 2,3-Dihydrofuro[2,3-c]pyridine-5-carboxylic acid 478148-59-3P, 5-Hydroxymethyl-2-trimethylsilylfuro[2,3-c]pyridine 478148-60-6P, Furo[2,3-c]pyridin-5-ylmethanol 478148-61-7P, Furo[2,3-c]pyridine-5-carboxaldehyde 478148-62-8P, Furo[2,3-c]pyridine-5-carboxylic acid 478148-64-0P, [6-Chloro-4-iodo-5-[(2-methyl-2-propenyl)oxy]-2-pyridinyl]methanol 478148-65-1P, (7-Chloro-3,3-dimethyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-66-2P, (3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-67-3P, 3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridine-5-carboxaldehyde 478148-68-4P, 3,3-Dimethyl-2,3-dihydrofuro[2,3-c]pyridine-5-carboxylic acid 478148-70-8P, (7-Chloro-2-methylfuro[2,3-c]pyridin-5-yl)methanol 478148-71-9P, (2-Methylfuro[2,3-c]pyridin-5-yl)methanol 478148-72-0P,

2-Methylfuro[2,3-c]pyridine-5-carboxaldehyde 478148-73-1P, 2-Methylfuro[2,3-c]pyridine-5-carboxylic acid 478148-79-7P, Ethyl 3-[[(trifluoromethyl)sulfonyl]oxy]furo[2,3-b]pyridine-2-carboxylate 478148-81-1P, 3-(Allyloxy)-2-chloro-6-(hydroxymethyl)-4-iodopyridine 478148-82-2P, (7-Chloro-3-methyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-83-3P, (3-Methyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methanol 478148-84-4P, (3-Methyl-2,3-dihydrofuro[2,3-c]pyridin-5-yl)methyl acetate 478148-85-5P, (3-Methylfuro[2,3-c]pyridin-5-yl)methanol 478148-86-6P, 3-Methylfuro[2,3-c]pyridine-5-carboxaldehyde 478148-87-7P, 3-Methylfuro[2,3-c]pyridine-5-carboxylic acid 478148-89-9P, 3-Ethylfuro[2,3-c]pyridine-5-carboxylic acid 478148-91-3P, 3-Isopropylfuro[2,3-c]pyridine-5-carboxylic acid 478148-97-9P, Thieno[2,3-b]pyridine-6-carboxylic acid 478148-99-1P, Ethyl thieno[2,3-c]pyridine-2-carboxylate 478149-00-7P, Thieno[2,3-c]pyridine-2-carboxylic acid 478149-02-9P, Methyl thieno[3,2-b]pyridine-2-carboxylate 478149-05-2P 478149-07-4P, Methyl thieno[3,2-c]pyridine-2-carboxylate 478149-12-1P, 5-(1,3-Dioxolan-2-yl)-1-methyl-1H-pyrrolo[2,3-c]pyridine 478149-13-2P, 1-Methylpyrrolo[2,3-c]pyridine-5-carboxaldehyde 478149-14-3P, 1-Methylpyrrolo[2,3-c]pyridine-5-carboxylic acid 478149-16-5P 478149-20-1P, (Furo[2,3-c]pyridin-5-yl)methyl acetate 478149-21-2P, (3-Chlorofuro[2,3-c]pyridin-5-yl)methanol 478149-22-3P, 3-Chlorofuro[2,3-c]pyridine-5-carboxaldehyde 478149-23-4P, 3-Chlorofuro[2,3-c]pyridine-5-carboxylic acid 478149-25-6P, (3-Bromofuro[2,3-c]pyridin-5-yl)methanol 478149-26-7P, 3-Bromofuro[2,3-c]pyridine-5-carboxaldehyde 478149-27-8P, 3-Bromofuro[2,3-c]pyridine-5-carboxylic acid 478149-29-0P, Methyl furo[3,2-c]pyridine-6-carboxylate 478149-30-3P, Furo[3,2-c]pyridine-6-carboxylic acid 478149-49-4P, Methyl thieno[3,4-c]pyridine-6-carboxylate 478149-50-7P, Thieno[3,4-c]pyridine-6-carboxylic acid 478169-65-2P 478169-68-5P, Methyl 3-hydroxy-4-[(trimethylsilyl)ethynyl]benzoate 478169-69-6P 478169-70-9P 478169-71-0P 478169-72-1P 478169-77-6P 500556-90-1P 500556-91-2P 508201-49-8P, (3S)-1-((S)-1-Phenethyl)-3-(chloromethyl)pyrrolidine 508201-52-3P, (5R)-1-Azabicyclo[3.2.1]octan-3-one hydrochloride 508201-54-5P, (5R)-3-Oxo-1-((1S)-1-phenylethyl)-1-azoniabicyclo[3.2.1]octane chloride 508201-56-7P, (3R,5R)-1-Azabicyclo[3.2.1]octan-3-amine dihydrochloride 508201-58-9P, 1-Azabicyclo[3.2.2]nonan-3-amine bis(4-methylbenzenesulfonate) 527680-64-4P, 1-(2,4-Diiodophenoxy)butan-2-ol 527680-65-5P 527680-66-6P 527680-67-7P 527680-73-5P 527680-79-1P 527680-80-4P 527680-99-5P 527681-05-6P 527681-07-8P 527681-11-4P 527681-12-5P, Methyl 2,3-dihydro-1,4-dioxino[2,3-c]pyridine-7-carboxylate 527681-13-6P, 2,3-Dihydro-1,4-dioxino[2,3-c]pyridine-7-carboxylic acid 527681-26-1P, Methyl 3-(allyloxy)-4-formylbenzoate 527681-29-4P, Methyl 3-(allyloxy)-4-vinylbenzoate 527681-32-9P 527681-33-0P 527681-40-9P, Ethyl 4-(allyloxy)-3-formylbenzoate 527681-41-0P, Ethyl 4-(allyloxy)-3-vinylbenzoate 527681-42-1P 527681-43-2P, 2H-1-Benzopyran-6-carboxylic acid 527681-47-6P, Methyl 4-hydroxy-3-vinylbenzoate 527681-48-7P, Methyl 3-formyl-4-[(1-methylprop-2-enyl)oxy]benzoate 527681-49-8P 527681-51-2P 527681-56-7P, 2-Chloro-6-(hydroxymethyl)-4-vinylpyridin-3-ol 527681-57-8P, [5-(Allyloxy)-6-chloro-4-vinylpyridin-2-yl]methanol 527681-59-0P 527681-60-3P, (3,4-Dihydro-2H-pyrano[2,3-c]pyridin-6-yl)methanol 527681-61-4P 527681-62-5P, 3,4-Dihydro-2H-pyrano[2,3-c]pyridine-6-carboxylic acid 588702-80-1P, Methyl 2,3-dihydrobenzofuran-5-carboxylate 588720-10-9P, Ethyl 7-chloropyrrolo[1,2-c]pyrimidine-3-carboxylate 588720-11-0P, Ethyl 6-chloropyrrolo[1,2-c]pyrimidine-3-carboxylate 588720-12-1P, Ethyl 6-bromopyrrolo[1,2-c]pyrimidine-3-carboxylate 588720-13-2P, Pyrrolo[1,2-c]pyrimidine-3-carboxylic acid hydrochloride 588720-14-3P 588720-15-4P 588720-16-5P 588720-29-0P, Imidazo[1,5-a]pyridine-7-carboxylic acid 588720-47-2P 588720-48-3P, Pyrrolo[1,2-a]pyrazine-3-carboxylic acid hydrochloride 588720-58-5P 588720-59-6P 655785-32-3P 655785-40-3P, 4-Nitrophenyl 4-(2-chlorophenyl)-1H-pyrazole-1-carboxylate 688790-08-1P 711083-82-8P, (3S)-3-(Phenoxymethyl)-2,3-dihydro-1,4-benzodioxine-6-carboxylic acid 712343-12-9P, Thieno[3,4-c]pyridine-6-methanol

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 655785-33-4P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(nAChR agonist; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 473795-11-8P 478148-80-0P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-methylfuro[2,3-c]pyridine-5-carboxamide 478148-90-2P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-isopropylfuro[2,3-c]pyridine-5-carboxamide 478149-24-5P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-bromofuro[2,3-c]pyridine-5-carboxamide 478149-31-4P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-bromothieno[2,3-c]pyridine-5-carboxamide 478149-43-8P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]-3-ethynylfuro[2,3-c]pyridine-5-carboxamide 478149-45-0P, N-[(3S)-1-Azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide 478149-46-1P, N-(1-Azabicyclo[2.2.2]oct-3-yl)furo[2,3-c]pyridine-5-carboxamide 478149-47-2P 478149-53-0P, N-[(3R)-1-Azabicyclo[2.2.2]oct-3-yl]furo[2,3-c]pyridine-5-carboxamide 478149-55-2P 478149-58-5P 478149-67-6P 478149-68-7P 478149-72-3P 478149-73-4P 478149-74-5P 478149-78-9P 478149-83-6P 478149-95-0P 478149-96-1P 478150-02-6P 478152-73-7P 478152-78-2P 478169-41-4P 478169-43-6P 478169-45-8P 478169-49-2P 478169-75-4P 478169-89-0P 478170-28-4P 501892-52-0P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]-1-benzofuran-5-carboxamide 501892-84-8P 501893-00-1P 501893-01-2P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]thieno[2,3-c]pyridine-5-carboxamide 501893-02-3P 501893-03-4P 501893-10-3P, N-[(1S,2R,4R)-7-Azabicyclo[2.2.1]hept-2-yl]-3-bromofuro[2,3-c]pyridine-5-carboxamide 501893-13-6P 501893-17-0P 501893-18-1P 501893-19-2P 501893-20-5P 501893-23-8P 501897-07-0P 501901-29-7P 501901-30-0P 501901-33-3P 501901-43-5P 501901-47-9P 501901-48-0P 501901-50-4P 508201-60-3P 508201-72-7P 508201-75-0P 508201-78-3P 508201-88-5P 508201-93-2P 508202-02-6P 508202-05-9P 508202-22-0P 508202-68-4P 508203-04-1P 508203-63-2P 521277-79-2P 521278-10-4P 521278-18-2P 527680-56-4P 527681-36-3P 527681-66-9P 588702-81-2P 588702-84-5P 588702-87-8P 588703-09-7P 588703-11-1P 588703-26-8P 588703-34-8P 588703-35-9P 588703-37-1P 588703-38-2P 588703-46-2P 588703-51-9P 588703-53-1P 588704-11-4P 588705-34-4P 588705-35-5P 588705-36-6P 588705-41-3P 588705-43-5P 588705-51-5P 588705-52-6P 588705-80-0P 588720-18-7P 588720-21-2P 588720-37-0P 588720-43-8P 588720-45-0P 588720-54-1P 588720-56-3P 588720-60-9P 588720-69-8P 588723-76-6P 588726-61-8P 588726-81-2P 590369-66-7P 590369-67-8P 590369-75-8P 590370-28-8P 590370-30-2P 590370-42-6P 655785-29-8P 655785-31-2P 655785-35-6P 655785-43-6P 688741-75-5P 711085-63-1P 711085-68-6P 711086-78-1P 711088-12-9P 711089-23-5P 711089-83-7P 711089-98-4P 711090-06-1P 711090-20-9P 712343-13-0P 712343-14-1P 712343-15-2P 712343-17-4P, N-(1-Azabicyclo[2.2.2]oct-3-yl)[1]benzo[b]thieno[3,2-c]pyridine-3-carboxamide 712343-19-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(nAChR agonist; preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 75-66-1, tert-Butyl mercaptan 95-92-1, Diethyl oxalate 97-65-4, Itaconic acid, reactions 99-06-9, 3-Hydroxybenzoic acid, reactions 106-95-6, Allyl bromide, reactions 108-47-4, 2,4-Lutidine 108-95-2, Phenol, reactions 109-09-1, 2-Chloropyridine 254-04-6, 2H-1-Benzopyran 503-60-6, 1-Chloro-3-methyl-2-butene 591-97-9, 1-Chloro-2-butene 609-40-5, 2-Nitrothiophene 616-45-5, 2-Pyrrolidinone 621-84-1, Benzyl carbamate 623-50-7, Ethyl glycolate 625-48-9, 2-Nitroethanol 626-60-8, 3-Chloropyridine 922-67-8, Methyl propiolate 931-33-9, 4-Bromopyrrole-2-carboxaldehyde 932-41-2, 2,3-Thiophenedicarboxaldehyde

1003-29-8, Pyrrole-2-carboxaldehyde 1066-54-2, Trimethylsilylacetylene 1067-71-6 1445-45-0, Trimethyl orthoacetate 1452-94-4, Ethyl 2-chloronicotinate 1458-98-6, 3-Bromo-2-methylpropene 1757-28-4, 5-Chloropyrrole-2-carboxaldehyde 1885-14-9, Phenyl chloroformate 2012-29-5, 2,4-Diiodophenol 2075-45-8, 4-Bromopyrazole 2258-42-6, Acetic formic anhydride 2365-48-2, Methyl thioglycolate 2374-03-0, 4-Amino-3-hydroxybenzoic acid 2458-12-0, 3-Amino-4-methylbenzoic acid 2627-86-3, ((S)-(-)-α-Methylbenzyl)amine 2999-46-4, Ethyl isocyanoacetate 3141-26-2, 3,4-Dibromothiophene 3469-69-0, 4-Iodopyrazole 3770-50-1, Ethyl indole-2-carboxylate 4228-10-8, 1-Indan-5-ylethanone 5176-27-2, 1-(tert-Butoxycarbonyl)-1H-pyrrole 6367-37-9 6636-78-8, 2-Chloro-3-pyridinol 7342-82-7, 3-Bromothianaphthene 7379-35-3, 4-Chloropyridine hydrochloride 7693-46-1, 4-Nitrophenyl chloroformate 13139-17-8, N-[[(Benzyloxy)carbonyl]oxy]succinimide 13361-64-3, Propargyltrimethylsilane 14719-83-6, Methyl 4-chloro-3-nitrobenzoate 15905-18-7, Methyl nicotinate 1-oxide 22037-28-1, 3-Bromofuran 22288-78-4, Methyl 3-aminothiophene-2-carboxylate 24589-98-8, Methyl 4-formyl-3-hydroxybenzoate 24589-99-9, Methyl 3-formyl-4-hydroxybenzoate 26249-20-7, Butene oxide 33515-58-1, 4-Chloropyrrole-2-carboxaldehyde 37746-78-4, Ethyl (E)-4-bromo-2-butenoate 43077-77-6, 4,5-Dihydroxypyridine-2-carboxylic acid 61040-21-9 79099-07-3, tert-Butyl 4-oxo-1-piperidinecarboxylate 82304-99-2, Ethyl 3-formyl-4-hydroxybenzoate 90843-31-5, 1-(2,3-Dihydrobenzofuran-5-yl)ethanone 123536-14-1, (R)-(+)-3-Aminoquinuclidine dihydrochloride 145100-51-2, 2-[N,N-Bis(trifluoromethylsulfonyl)amino]-5-chloropyridine 187543-81-3 280752-79-6 473795-37-8, 1-Azabicyclo[3.2.1]octan-3-one hydrochloride 478148-95-7 527681-03-4 655785-37-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

IT 1074-76-6P, 2,4-Dimethyl-3-nitropyridine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of N-(quinuclidinyl)heteroarylamides as nAChR agonists for use in combination therapy for treatment of ADHD)

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TI Inhibition of **inflammation** using **.alpha.7** **nicotinic** receptor-binding cholinergic agonists
IN Tracey, Kevin J.; Wang, Hong
PA North Shore-Long Island Jewish Research Institute, USA
SO PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-444
ICS A61K031-454; A61P001-00; A61P009-00; A61P011-00; A61P015-00; A61P029-00; A61P031-00; A61P033-00; A61P037-00; A61P043-00
CC 1-7 (Pharmacology)
FAN.CNT 1

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PI	WO 2004052365	A2	20040624	WO 2003-US38708	20031205
	WO 2004052365	A3	20040923		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,

BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004204355 A1 20041014 US 2003-729427 20031205
PRAI US 2002-431650P P 20021206

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004052365	ICM	A61K031-444
	ICS	A61K031-454; A61P001-00; A61P009-00; A61P011-00; A61P015-00; A61P029-00; A61P031-00; A61P033-00; A61P037-00; A61P043-00
US 2004204355	NCL	514/012.000
	ECLA	A61K031/00; A61K031/439; A61K031/444; A61K031/46

OS MARPAT 141:65099

AB Methods of inhibiting release of a proinflammatory cytokine from a macrophage are provided. The methods comprise treating the macrophage with a cholinergic agonist in an amount sufficient to decrease the amount of the proinflammatory cytokine that is released from the macrophage, wherein the cholinergic agonist is selective for an **.alpha.7 nicotinic** receptor. Methods for inhibiting an **inflammatory** cytokine cascade in a patient are also provided. The methods comprise treating the patient with a cholinergic agonist in an amount sufficient to inhibit the **inflammatory** cytokine cascade, wherein the cholinergic agonist is selective for an α **7 nicotinic** receptor. Methods for determining whether a compound is a cholinergic agonist reactive with an α **7 nicotinic** receptor are also provided. The methods comprise determining whether the compound inhibits release of a proinflammatory cytokine from a mammalian cell. Addnl., methods for determining whether a compound is a cholinergic antagonist reactive with an α **7 nicotinic** receptor are provided. These methods comprise determining whether the compound reduces the ability of a cholinergic agonist to inhibit the release of a proinflammatory cytokine from a mammalian cell. Oligonucleotides or mimetics capable of inhibiting attenuation of lipopolysaccharide-induced **TNF** release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an α7 receptor. Addnl., methods of inhibiting attenuation of **TNF** release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)anabaseine.

ST **inflammation** inhibition **alpha7 nicotinic** receptor cholinergic agonist; proinflammatory cytokine macrophage inhibition **alpha7 nicotinic** agonist; **inflammatory** cytokine cascade inhibition **alpha7 nicotinic** agonist; sepsis treatment dimethoxybenzylidene anabaseine

IT Kidney, disease
(Goodpasture's syndrome, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT High-mobility group proteins
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(HMG1, as proinflammatory cytokine inhibited from release from macrophage; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Kidney, disease
(IgA nephropathy, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Bone, disease
(Paget's, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Arthritis
(Reiter's syndrome, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Intestine, disease
(Whipple's, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Digestive tract, disease
(achalasia, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Respiratory distress syndrome
(adult, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Transplant rejection
(allotransplant, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Lung, disease
(alveolitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Ameba
(amebiasis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT **Inflammation**
Spinal column, disease
(ankylosing spondylitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Appendix, disease
Inflammation
(appendicitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Artery, disease
Inflammation
(arteritis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Disease, animal
Pain
(arthralgia, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Interleukin 18
Interleukin 1β
Interleukin 6
Tumor necrosis factors
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(as proinflammatory cytokine inhibited from release from macrophage; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)
IT Bronchi, disease
Inflammation
(bronchiolitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding

cholinergic agonists)
IT Bronchi, disease
Inflammation
(bronchitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Mycosis
(candidiasis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Ischemia
(cardiac, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Immune system
(cell of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Biliary tract, disease
Inflammation
(cholangitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Gallbladder, disease
Inflammation
(cholecystitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Lung, disease
(chronic obstructive, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT **Inflammation**
Intestine, disease
(colitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Infection
(dengue, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Joint, anatomical
(disease, arthralgia, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Urethra
(disease, urethritis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Immunity
(disorder, immune complex, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Bacteremia
(disseminated, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Ulcer
(duodenal, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Intestine, disease
(duodenum, ulcer, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Heart, disease

Inflammation
(endocarditis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Granuloma
(eosinophilic, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Epididymis
(epididymitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(epiglottitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Heart, disease
(failure, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(fascia, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Infection
(filariasis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for α 7 **nicotinic** receptor, oligonucleotides complementary to; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for α 7 **nicotinic** receptor; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Ulcer
(gastric, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Transplant and Transplantation
(graft-vs.-host reaction, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Granulomatous disease
(granulomatosis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Cyst, pathological
(hydatid, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Brain, disease
(infarction, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Hepatitis B virus
Hepatitis C virus
Herpesviridae
Human herpesvirus
Human immunodeficiency virus
Respiratory syncytial virus

(infection with, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Allergy inhibitors
Anti-AIDS agents
Anti-**inflammatory** agents
Antiarthritics
Antiasthmatics
Antimalarials
Antirheumatic agents
Drug screening
Human
Inflammation
Mammalia
(**inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Oligonucleotides
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(inhibiting attenuation of lipopolysaccharide-induced **TNF** release from macrophages exposed to cholinergic agonists; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Macrophage
(inhibition of proinflammatory cytokines release from; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Reperfusion
Spinal cord, disease
(injury, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Heart, disease
(ischemia, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Animal cell
(mammalian; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Heart, disease
Inflammation
(myocarditis, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Nerve, disease
Pain
(neuralgia, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Nerve, disease
(neuritis, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Pancreas, disease
(pancreatitis, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Ulcer
(peptic, treatment of; **inflammation** inhibition with α **7** **nicotinic** receptor-binding cholinergic agonists)

IT Artery, disease
Inflammation

(periarteritis nodosa, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Pericardium
(pericarditis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Peritoneum, disease
(peritonitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Pharynx, disease
(pharyngitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Pleura, disease
(pleurisy, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Lung, disease
(pneumonitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Lung, disease
(pneumoultramicroscopic silicovolcanoconiosis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Cytokines
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory, inhibition of cascade of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Cytokines
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory, inhibition of release of, from macrophages; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Prostate gland, disease
(prostatitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(pulmonary alveolitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(pulmonary, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Injury
(reperfusion, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Nose, disease
(rhinitis, treatment of; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT Lipopolysaccharides
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(screening for agents inhibiting induction in mammalian cell of proinflammatory cytokine cascade by; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Abortion
Shock (circulatory collapse)
(septic, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT **Inflammation**
Respiratory tract, disease
(sinusitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Injury
(spinal cord, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Brain, disease
(stroke, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Arthritis
Synovial membrane, disease
(synovitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Lupus erythematosus
(systemic, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT **Inflammation**
Thyroid gland, disease
(thyroiditis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Antisense oligonucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(to α **7 nicotinic** receptor; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)
IT Allergy
Anaphylaxis
Arthritis
Asthma
Atherosclerosis
Behcet's syndrome
Burn
Cachexia
Celiac disease
Cystic fibrosis
Emphysema
Encephalitis
Fever and Hyperthermia
Gout
Hay fever
Hepatitis
Hodgkin's disease
Influenza
Ischemia
Malaria
Meningitis

Myasthenia gravis
Necrosis
Osteomyelitis
Paralysis
Periodontium, disease
Rheumatic fever
Rheumatoid arthritis
Sarcoidosis
Sepsis
Septicemia
(treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Digestive tract, disease
(ulcer, peptic, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Stomach, disease
(ulcer, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
(urethritis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Eye, disease
Inflammation
(uveitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT **Inflammation**
Vagina, disease
(vaginitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Nerve
(vagus, **nicotinic** receptor α **7** in inhibition of **TNF** release in response to stimulation of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Blood vessel, disease
Inflammation
(vasculitis, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Thrombosis
(venous, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT Infection
(viral, treatment of; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT **Nicotinic** agonists
Nicotinic antagonists
(α **7**; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α **7**; **inflammation** inhibition with α **7 nicotinic** receptor-binding cholinergic agonists)

IT 50-36-2D, Cocaine, quaternary analogs 5937-29-1, Cocaine methiodide 154291-01-7D, isomers 156743-65-6 156743-78-1 156743-79-2 156743-85-0 178419-47-1 220099-94-5 248270-35-1D, isomers

248270-40-8 248270-41-9 373358-00-0 400855-55-2 400855-58-5
400855-62-1 708210-26-8D, isomers 708210-27-9
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(as cholinergic agonist of α 7 **nicotinic** receptor; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT 54-11-5, Nicotine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT 708306-01-8
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence, inhibiting attenuation of LPS-induced **TNF** release from macrophage exposed to cholinergic agonist; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

IT 709881-00-5 709881-01-6 709881-02-7 709881-03-8 709881-04-9
709881-05-0 709881-06-1 709881-07-2 709881-08-3 709881-09-4
709881-10-7 709881-11-8 709881-12-9 709881-13-0 709881-14-1
709881-15-2 709881-16-3 709881-17-4 709881-18-5 709881-19-6
RL: PRP (Properties)
(unclaimed sequence; inhibition of **inflammation** using α 7 **nicotinic** receptor-binding cholinergic agonists)

IT 11032-79-4, α-Bungarotoxin 37209-28-2, Bungarotoxin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7 **nicotinic** receptor antagonist; **inflammation** inhibition with α 7 **nicotinic** receptor-binding cholinergic agonists)

L8 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:356732 CAPLUS
DN 141:1722
ED Entered STN: 03 May 2004
TI Cholinergic modulation of microglial activation by α 7 **nicotinic** receptors
AU Shytle, R. Douglas; Mori, Takashi; Townsend, Kirk; Vendrame, Martina; Sun, Nan; Zeng, Jin; Ehrhart, Jared; Silver, Archie A.; Sanberg, Paul R.; Tan, Jun
CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medicine, Tampa, FL, USA
SO Journal of Neurochemistry (2004), 89(2), 337-343
CODEN: JONRA9; ISSN: 0022-3042
PB Blackwell Publishing Ltd.
DT Journal
LA English
CC 2-8 (Mammalian Hormones)
Section cross-reference(s): 14
AB Almost all degenerative diseases of the CNS are associated with chronic **inflammation.** A central step in this process is the activation of brain mononuclear phagocyte cells, called microglia. While it is recognized that healthy neurons and astrocytes regulate the magnitude of microglia-mediated innate immune responses and limit excessive CNS **inflammation**, the endogenous signals governing this process are not fully understood. In the peripheral nervous system, recent studies suggest that an endogenous "cholinergic anti-**inflammatory** pathway" regulates systemic **inflammatory** responses via . **alpha.7 nicotinic** acetylcholinergic receptors (nAChR) found on blood-borne macrophages. These data led the authors to investigate whether a similar cholinergic pathway exists in the brain that could regulate microglial activation. Here the authors report for the

first time that cultured microglial cells express α7 nAChR subunit as determined by RT-PCR, western blot, immunofluorescent, and immunohistochem. analyses. Acetylcholine and nicotine pre-treatment inhibit lipopolysaccharide (LPS)-induced **TNF**-α release in murine-derived microglial cells, an effect attenuated by α **7** selective **nicotinic** antagonist, α-bungarotoxin. Furthermore, this inhibition appears to be mediated by a reduction in phosphorylation of p44/42 and p38 mitogen-activated protein kinase (MAPK). Though preliminary, the authors' findings suggest the existence of a brain cholinergic pathway that regulates microglial activation through . **alpha.7 nicotinic** receptors. Neg. regulation of microglia activation may also represent addnl. mechanism underlying nicotine's reported neuroprotective properties.

ST nicotinic receptor ERK p38 signaling microglia cholinergic system brain

IT Signal transduction, biological
(cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Nervous system
(cholinergic; cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Nervous system, disease
(degeneration; cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to possible role in neurodegenerative diseases)

IT Neuroglia
(microglia; cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT Phosphorylation, biological
(protein; cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α **7**; cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

IT 51-84-3, Acetylcholine, biological studies 54-11-5, Nicotine 137632-07-6, ERK1 kinase 137632-08-7, ERK2 kinase 165245-96-5, p38 Mitogen activated protein kinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cholinergic modulation of murine microglial activation by α **7 nicotinic** receptors in relation to role of ERK and p38 kinase signal transduction)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L8 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:967213 CAPLUS
DN 140:157323
ED Entered STN: 11 Dec 2003
TI Nicotine-induced neuroprotection against N-methyl-D-aspartic acid or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines
AU Gahring, Lorise C.; Meyer, Erin L.; Rogers, Scott W.
CS Education and Clinical Center, Salt Lake City VA-Geriatric Research, Salt Lake City, UT, USA
SO Journal of Neurochemistry (2003), 87(5), 1125-1136
CODEN: JONRA9; ISSN: 0022-3042
PB Blackwell Publishing Ltd.
DT Journal
LA English
CC 1-11 (Pharmacology)
Section cross-reference(s): 4
AB Nicotine, the causative agent of addiction to tobacco, can also be a neuroprotectant. Nicotine-induced neuroprotection against different toxins is imparted through pharmacol. distinct neuronal **nicotinic** acetylcholine receptors (nAChR) where protection against chronic N-methyl-D-aspartic acid (NMDA) exposure is through nAChRα 7 but protection against the toxic peptide of amyloid precursor protein, Aβ25-35, is through nAChRα4β2. The **inflammatory** cytokine **tumor necrosis factor** alpha (**TNF**.alpha.) is also neuroprotective, however, in the presence of nicotine, neuroprotection against NMDA is abolished. The specificity of nicotine-**TNF**.alpha. antagonism was further refined using a mouse transgenic dominant neg. of nAChRα7 in which nicotine failed to induce neuroprotection against NMDA and antagonism of **TNF**.alpha. was absent. However, nicotine-mediated neuroprotection against Aβ25-35 was unaffected and, therefore, did not require the expression of functional nAChRα7s. The mechanism of **TNF**.alpha.-mediated neuroprotection and antagonism by nicotine was independent of caspase 8 activation or nuclear factor kappa B translocation in neurons but C6-ceramide addition to neuronal cultures subsequently exposed to NMDA mimicked the neuroprotective effect of **TNF**.alpha. and, like **TNF**.alpha., it was antagonized

by cotreatment with nicotine. Therefore, the neuroprotective effects of nicotine against differing toxic assaults requires distinct nAChR subtypes and proceeds through intracellular pathways that overlap with similarly different mechanisms initiated by pro-**inflammatory** cytokines. These results provide insight into how nicotine imparts neuroprotection and modulates **inflammatory** responses.

ST nicotine neuroprotection NMDA beta amyloid peptide neurotoxicity; nicotinic receptor TNFalpha nicotine neuroprotection

IT Amyloid precursor proteins
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(Aβ25-35; nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Cytoprotective agents
(neuroprotective; nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Human
Nerve
(nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Cytokines
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(proinflammatory; nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Nicotinic receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(subunits; nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT Nerve
(toxicity; nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT 6384-92-5, N-Methyl-D-aspartic acid
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

IT 54-11-5, Nicotine
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nicotine-induced neuroprotection against NMDA or β-amyloid peptide occur through independent mechanisms distinguished by pro-**inflammatory** cytokines)

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L8 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:881970 CAPLUS
DN 140:107185
ED Entered STN: 11 Nov 2003
TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda
AU Chimienti, Fabrice; Hogg, Ronald C.; Plantard, Laure; Lehmann, Caroline; Brakch, Noureddine; Fischer, Judith; Huber, Marcel; Bertrand, Daniel;

Hohl, Daniel
CS Dermatology Unit, CHUV, Laboratory for Cutaneous Biology, Lausanne, Switz.
SO Human Molecular Genetics (2003), 12(22), 3017-3024
CODEN: HMGEE5; ISSN: 0964-6906
PB Oxford University Press
DT Journal
LA English
CC 6-3 (General Biochemistry)
Section cross-reference(s): 3, 14
AB Mal de Meleda is an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder due to mutations in the ARS B gene, encoding for SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1). SLURP-1 belongs to the Ly-6/uPAR superfamily of receptor and secreted proteins, which participate in signal transduction, immune cell activation or cellular adhesion. The high degree of structural similarity between SLURP-1 and the three fingers motif of snake neurotoxins and Lynx1 suggests that this protein interacts with the neuronal acetylcholine receptors. We found that SLURP-1 potentiates the human α **7 nicotinic** acetylcholine receptors that are present in keratinocytes. These results identify SLURP-1 as a secreted epidermal neuromodulator which is likely to be essential for both epidermal homeostasis and inhibition of **TNF**-alpha release by macrophages during wound healing. This explains both the hyperproliferative as well as the **inflammatory** clin. phenotype of Mal de Meleda.
ST human protein SLURP 1 neuromodulator secreted protein skin disorder; Mal de Meleda palmoplantar keratosis human SLURP1
IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ARS B; characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)
IT Wound healing
(SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-α release by macrophages during wound healing)
IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-α release by macrophages during wound healing)
IT Human
Skin, disease
(characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)
IT Skin
(epidermis; SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of **TNF**-α release by macrophages during wound healing)
IT Keratosis
(hyper-, palmoplantar; characterization of the role of SLURP-1 in Mal de Meleda, an autosomal recessive **inflammatory** and keratotic palmoplantar skin disorder arising due to mutations in the ARS B gene)
IT Phenotypes
(identification of SLURP-1 as an epidermal neuromodulator explains the clin. phenotype of Mal de Meleda)
IT Neurohormones
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(neuromodulators; identification of SLURP-1 (secreted mammalian Ly-6/uPAR-related protein 1) as an epidermal neuromodulator of the α 7 **nicotinic** acetylcholine receptor)
IT Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(secretory; SLURP-1 is a secreted epidermal neuromodulator and is likely essential for both epidermal homeostasis and inhibition of

TNF-α release by macrophages during wound healing)
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L8 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:164666 CAPLUS
DN 139:17796
ED Entered STN: 05 Mar 2003
TI Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells
AU Nomura, Jun; Hosoi, Toru; Okuma, Yasunobu; Nomura, Yasuyuki
CS Graduate School of Pharmaceutical Sciences, Department of Pharmacology, Hokkaido University, Sapporo, 060-0812, Japan
SO Life Sciences (2003), 72(18-19), 2117-2120
CODEN: LIFSAK; ISSN: 0024-3205
PB Elsevier Science Inc.
DT Journal
LA English
CC 2-8 (Mammalian Hormones)
Section cross-reference(s): 14, 15
AB The brains in patients with Alzheimer's disease show chronic **inflammatory** responses characterized by activated glial cells and increased expression of cytokines. It is of interest to determine whether acetylcholine (ACh) affects Aβ-induced cytokine expression in the

glial cells. Since it has been shown that **.alpha.7** subunits of **nicotinic** ACh receptors are expressed in glial cells and that Aβ1-42 binds to **.alpha.7**, the authors examined the effects of cholinergic agonists, carbachol, nicotine and oxotremorine-M, on Aβ-induced **TNF**-α expression in mouse glial cells. The authors did not observe any regulatory effects of ACh on Aβ-induced **TNF**-α transcription in the glial cells. The authors discuss the pathophysiol. roles of ACh in glial cells in the brains of patients with Alzheimer's disease.

ST beta amyloid **TNF** expression acetylcholine neuroglia; Alzheimer disease acetylcholine neuroglia cytokine

IT Alzheimer's disease
Neuroglia
Transcriptional regulation
(Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α 7; Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

IT 107761-42-2, β-Amyloid 1-42
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

IT 51-84-3, Acetylcholine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

IT 51-83-2, Carbachol 54-11-5, Nicotine 63939-65-1, Oxotremorine-M
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cholinergic agonist; Aβ-induced **TNF**-α expression and acetylcholine action in mouse glial cells in relation to Alzheimer's disease)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L8 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:164662 CAPLUS

DN 139:17793

ED Entered STN: 05 Mar 2003

TI Nicotinic acetylcholine receptor subunits and receptor activity in the epithelial cell line HT29

AU Summers, Andrea E.; Whelan, Clifford J.; Parsons, Mike E.

CS Department of Biosciences, University of Hertfordshire, Hertfordshire, AL10 9AB, UK

SO Life Sciences (2003); 72(18-19), 2091-2094
CODEN: LIFSAK; ISSN: 0024-3205
PB Elsevier Science Inc.
DT Journal
LA English
CC 2-8 (Mammalian Hormones)
Section cross-reference(s): 14, 15
AB In the present study the authors have used RT-PCR to investigate nicotinic acetylcholine receptor (nAChR) subunit expression, and studied the effect of nicotine on **TNF**.alpha.-induced cytokine (IL-8) release in the epithelial cell line HT29. RNA was extracted using a com. kit and amplified by RT-PCR. RT-PCR products were separated by electrophoresis and visualized using ethidium bromide. IL-8 release was measured by ELISA from cells activated for 6 h with **TNF**.alpha. (50 ng ml-1) in the absence and presence of nicotine (10-11-10-6 M). HT29 cells contained mRNA for β1, α4, α5, and α7 nAChR subunits. Activation of HT29 cells increased IL-8 release from undetectable amts. to 3.92 ng ml-1. Nicotine significantly inhibited **TNF**.alpha.-induced IL-8 release in a concentration related manner with peak inhibition occurring at 10-7 M (2.39 ng ml-1). The authors' data suggests that, while HT29 cells express mRNA for nAChR subunits, the only nAChR subunits that could form functional receptors and inhibit IL-8 release are α7.
ST nicotinic acetylcholine receptor colon epithelium; nicotine **TNF** IL8 release colon epithelium; ulcerative colitis nicotine IL8 release colon epithelium
IT Intestine
(colon, epithelium; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29)
IT Epithelium
(colonic; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29)
IT Interleukin 8
Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29)
IT **Inflammation**
Intestine, disease
(ulcerative colitis; nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29 in relation to ulcerative colitis)
IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α4, α5, α 7 and β1 subunits; **nicotinic** acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29)
IT 54-11-5, Nicotine
RL: PAC (Pharmacological activity); BIOL (Biological study)
(nicotinic acetylcholine receptor subunits expression and nicotine effect on **TNF**.alpha.-induced IL-8 release in colonic epithelial cell line HT29)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L8 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:54246 CAPLUS
DN 138:186295
ED Entered STN: 23 Jan 2003
TI **Nicotinic** acetylcholine receptor **.alpha.7** subunit is an essential regulator of **inflammation**
AU Wang, Hong; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; Tracey, Kevin J.
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA
SO Nature (London, United Kingdom) (2003), 421(6921), 384-388
CODEN: NATUAS; ISSN: 0028-0836
PB Nature Publishing Group
DT Journal
LA English
CC 15-10 (Immunochemistry)
AB Excessive **inflammation** and **tumor-necrosis factor** (**TNF**) synthesis cause morbidity and mortality in diverse human diseases including endotoxemia, sepsis, rheumatoid arthritis and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation.** The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage **TNF**, and attenuate systemic **inflammatory** responses. This physiol. mechanism, termed the cholinergic anti-**inflammatory** pathway' has major implications in immunol. and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here the authors report that the **nicotinic** acetylcholine receptor **.alpha.7** subunit is required for acetylcholine inhibition of macrophage **TNF** release. Elec. stimulation of the vagus nerve inhibits **TNF** synthesis in wild-type mice, but fails to inhibit **TNF** synthesis in α7-deficient mice. Thus, the **nicotinic** acetylcholine receptor **.alpha.7** subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.
ST nicotinic acetylcholine receptor vagus nerve sepsis
IT Endotoxemia
Human
Macrophage
(**nicotinic** acetylcholine receptor α **7** subunit is an essential regulator of **inflammation**)
IT Tumor necrosis factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**nicotinic** acetylcholine receptor α **7** subunit is an essential regulator of **inflammation**)
IT Nerve
(vagus; **nicotinic** acetylcholine receptor α **7** subunit is an essential regulator of **inflammation**)
IT **Nicotinic** receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α **7**; **nicotinic** acetylcholine receptor α **7** subunit is an essential regulator of **inflammation**)
IT 51-84-3, Acetylcholine, biological studies 54-11-5, Nicotine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**nicotinic** acetylcholine receptor α **7** subunit is an essential regulator of **inflammation**)
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(24) Tracey, K; Nature 2002, V420, P853 CAPLUS
(25) Tracey, K; Science 1986, V234, P470 CAPLUS
(26) Vijayaraghavan, S; Neuron 1992, V8, P353 CAPLUS
(27) Wang, H; Science 1999, V285, P248 CAPLUS

```
=> fs (alpha7 or alpha-7 or alpha 7)(S)nicotinic and (rheumatoid arthritis or RA)
          257 ALPHA7
      1538591 ALPHA
      2538498 7
         5868 ALPHA-7
                (ALPHA(W)7)
      1538591 ALPHA
      2538493 7
         5863 ALPHA 7
                (ALPHA(W)7)
        34587 NICOTINIC
         1097 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC
        25379 RHEUMATOID
        36436 ARTHRITIS
        22147 RHEUMATOID ARTHRITIS
                (RHEUMATOID(W)ARTHRITIS)
        37814 RA
L9          5 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC AND (RHEUMATOID ARTHR
              ITIS OR RA)

=>

=> d 1-5 bib

L9   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2005:223087  CAPLUS
TI   Autonomic neural regulation of immunity
AU   Czura, C. J.; Tracey, K. J.
CS   North Shore-LIJ Research Institute, Center for Patient Oriented Research,
     Manhasset, NY, USA
SO   Journal of Internal Medicine (2005), 257(2), 156-166
     CODEN: JINMEO; ISSN: 0954-6820
PB   Blackwell Publishing Ltd.
DT   Journal
LA   English
RE.CNT  75    THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L9 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:633526 CAPLUS
DN 141:167817
TI Treatment of diseases with alpha-7 NACh receptor full agonists
IN Groppi, Vincent Edward, Jr.; Rogers, Bruce Nelsen; Rudmann, Daniel Gregory
PA Pharmacia & Upjohn Company, USA
SO PCT Int. Appl., 142 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004064836	A2	20040805	WO 2004-IB115	20040112
	WO 2004064836	A3	20041223		

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ

PRAI US 2003-441801P P 20030122
OS MARPAT 141:167817

L9 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:513538 CAPLUS
DN 141:65099
TI Inhibition of inflammation using **.alpha.7** **nicotinic** receptor-binding cholinergic agonists
IN Tracey, Kevin J.; Wang, Hong
PA North Shore-Long Island Jewish Research Institute, USA
SO PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004052365	A2	20040624	WO 2003-US38708	20031205
	WO 2004052365	A3	20040923		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	US 2004204355	A1	20041014	US 2003-729427	20031205

PRAI US 2002-431650P P 20021206
OS MARPAT 141:65099

L9 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:892762 CAPLUS
DN 139:395938
TI Preparation of ureas as positive allosteric modulators of the nicotinic acetylcholine receptor
IN Piotrowski, David W.; Rogers, Bruce N.; McWhorter, William W., Jr.; Walker, Daniel P.; Corbett, Jeffrey W.; Groppi, Vincent E., Jr.; Rudmann, Daniel G.
PA Pharmacia & Upjohn Company, USA

SO PCT Int. Appl., 159 pp.
    CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003093250	A2	20031113	WO 2003-US11493	20030428
	WO 2003093250	A3	20041223		
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003236287	A1	20031225	US 2003-423062	20030425
	US 2004249150	A1	20041209	US 2004-879849	20040629
	US 2004254373	A1	20041216	US 2004-880781	20040630
PRAI	US 2002-377364P	P	20020503		
	US 2003-456941P	P	20030324		
	US 2003-441750P	P	20030122		
	US 2003-423062	A3	20030425		

OS MARPAT 139:395938

L9 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:54246 CAPLUS
DN 138:186295
TI **Nicotinic** acetylcholine receptor **.alpha.7**
    subunit is an essential regulator of inflammation
AU Wang, Hong; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; Tracey, Kevin J.
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA
SO Nature (London, United Kingdom) (2003), 421(6921), 384-388
    CODEN: NATUAS; ISSN: 0028-0836
PB Nature Publishing Group
DT Journal
LA English
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
            ALL CITATIONS AVAILABLE IN THE RE FORMAT

=>

---Logging off of STN---

=>
Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	82.09	95.63

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION

CA SUBSCRIBER PRICE -8.76 -8.76

STN INTERNATIONAL LOGOFF AT 15:41:33 ON 04 MAY 2005

Connecting via Winsock to STN

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LOGINID:SSPTAMXG1614

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
NEWS	4	FEB 28	PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS	5	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	6	FEB 28	MEDLINE/LMEDLINE reloaded
NEWS	7	MAR 02	GBFULL: New full-text patent database on STN
NEWS	8	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR 22	PATDPASPC - New patent database available
NEWS	13	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR 04	EMBASE - Database reloaded and enhanced
NEWS	16	APR 18	New CAS Information Use Policies available online
NEWS	17	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAplus and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	18	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAplus

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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  * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 15:51:04 ON 04 MAY 2005

=> index medicine health pharmacology
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS,
       CEN, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE,
       ESBIOBASE, IFIPAT, IMSDRUGNEWS, IMSPRODUCT, IPA, JICST-EPLUS, KOSMET,
       LIFESCI, MEDICONF, MEDLINE, NAPRALERT, ...' ENTERED AT 15:51:25 ON 04 MAY
2005

78 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s bungarotoxin and (rheumatoid arthritis or RA)
          1   FILE ADISNEWS
          5   FILE BIOSIS
          1   FILE CANCERLIT
          4   FILE CAPLUS
          1   FILE DDFB
          1   FILE DRUGB
          1   FILE DRUGU
          9   FILE EMBASE
          8   FILE IFIPAT
          1   FILE JICST-EPLUS
  23 FILES SEARCHED...
          1   FILE LIFESCI
          5   FILE MEDLINE
          4   FILE SCISEARCH
          6   FILE TOXCENTER
         72   FILE USPATFULL
          4   FILE USPAT2
          3   FILE NTIS
  71 FILES SEARCHED...

  17 FILES HAVE ONE OR MORE ANSWERS,   78 FILES SEARCHED IN STNINDEX

L1   QUE BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d rank
F1          72   USPATFULL
F2           9   EMBASE
F3           8   IFIPAT
F4           6   TOXCENTER
F5           5   BIOSIS
F6           5   MEDLINE
F7           4   CAPLUS
F8           4   SCISEARCH
F9           4   USPAT2
F10          3   NTIS
F11          1   ADISNEWS
F12          1   CANCERLIT
F13          1   DDFB
F14          1   DRUGB
F15          1   DRUGU
F16          1   JICST-EPLUS
F17          1   LIFESCI
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=> file medline
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         1.77       1.98

FILE 'MEDLINE' ENTERED AT 15:53:06 ON 04 MAY 2005

 FILE LAST UPDATED: 3 MAY 2005 (20050503/UP).  FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available.  For details enter HELP
 RLOAD at an arrow promt (=>).  See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2005 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s bungarotoxin and (rheumatoid arthritis or RA)
          3230 BUNGAROTOXIN
         80268 RHEUMATOID
        109889 ARTHRITIS
         47480 RHEUMATOID ARTHRITIS
                 (RHEUMATOID(W)ARTHRITIS)
        435794 RA
L2           5 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-5 bib

L2   ANSWER 1 OF 5     MEDLINE on STN
AN   2004357989     MEDLINE
DN   PubMed ID: 15262210
TI   Nicotine-mediated plasticity in robust nucleus of the archistriatum of the
     adult zebra finch.
AU   Salgado-Commissariat Delanthi; Rosenfield David B; Helekar Santosh A
CS   Speech and Language Center, Department of Neurology, Baylor College of
     Medicine, 6501 Fannin Street, NB 422, Houston, TX 77030, USA..
     delanthi@bcm.tmc.edu
SO   Brain research, (2004 Aug 20) 1018 (1) 97-105.
     Journal code: 0045503. ISSN: 0006-8993.
CY   Netherlands
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   200410
ED   Entered STN: 20040721
     Last Updated on STN: 20041007
     Entered Medline: 20041006

L2   ANSWER 2 OF 5     MEDLINE on STN
AN   2003033986     MEDLINE
DN   PubMed ID: 12508119
TI   Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator
     of inflammation.
CM   Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
     Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
```

AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307

L2 ANSWER 3 OF 5 MEDLINE on STN
AN 95257477 MEDLINE
DN PubMed ID: 7739124
TI Measurement of anti-acetylcholine receptor antibody using human rhabdomyosarcoma cell line.
AU Ito R; Ishiguro Y; Tetsumoto T; Harada H; Takanashi N; Oka M; Shindo Y; Yamauchi S; Ishigami T; Ohta K; +
CS SRL Inc. Department of Diagnostic Reagent, Hachioji.
SO Rinsho byori. Japanese journal of clinical pathology, (1995 Apr) 43 (4) 402-8.
Journal code: 2984781R. ISSN: 0047-1860.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA Japanese
FS Priority Journals
EM 199506
ED Entered STN: 19950615
Last Updated on STN: 19970203
Entered Medline: 19950607

L2 ANSWER 4 OF 5 MEDLINE on STN
AN 88026529 MEDLINE
DN PubMed ID: 3664371
TI Acetylcholine receptor antibodies in myasthenia gravis: use of a qualitative assay for diagnostic purposes.
AU Oger J; Kaufman R; Berry K
CS Department of Medicine (Neurology), University of British Columbia, Vancouver, Canada.
SO Canadian journal of neurological sciences. Le journal canadien des sciences neurologiques, (1987 Aug) 14 (3) 297-302.
Journal code: 0415227. ISSN: 0317-1671.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198712
ED Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19871215

L2 ANSWER 5 OF 5 MEDLINE on STN
AN 82245448 MEDLINE
DN PubMed ID: 7099199
TI D-Penicillamine-associated myasthenia gravis: immunological and electrophysiological studies.
AU Fawcett P R; McLachlan S M; Nicholson L V; Argov Z; Mastaglia F L
SO Muscle & nerve, (1982 Apr) 5 (4) 328-34.
Journal code: 7803146. ISSN: 0148-639X.

CY United States
DT (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198209
ED Entered STN: 19900317
Last Updated on STN: 19900317
Entered Medline: 19820910

=> d 4 all

L2 ANSWER 4 OF 5 MEDLINE on STN
AN 88026529 MEDLINE
DN PubMed ID: 3664371
TI Acetylcholine receptor antibodies in myasthenia gravis: use of a qualitative assay for diagnostic purposes.
AU Oger J; Kaufman R; Berry K
CS Department of Medicine (Neurology), University of British Columbia, Vancouver, Canada.
SO Canadian journal of neurological sciences. Le journal canadien des sciences neurologiques, (1987 Aug) 14 (3) 297-302.
Journal code: 0415227. ISSN: 0317-1671.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198712
ED Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19871215
AB We have modified the techniques of Lindstrom and of Tindall to measure serum acetylcholine receptor antibody using human antigen bound to 125I-alpha **Bungarotoxin.** By using 10 microliters of serum and precipitating antigen-antibody complexes with an excess of staph A, we found that only one out of 43 patients with clinically diagnosed active generalized Myasthenia Gravis had no antibodies. In pooling these results with the results of tests done for diagnostic purposes we found positive results in 54/55 generalized active MG, 8/21 MG in remission, 16/37 ocular MG and 0/55 healthy controls. Two out of 38 non MG were also positive and their clinical diagnosis of botulism and penicillamine treated **rheumatoid arthritis** have been confirmed by a one year follow-up. Most of these sera were also tested for reactivity with fetal calf AchR. Six out of 49 samples positive with the human receptor were negative with calf receptor. We conclude that our technique is extremely useful for the diagnosis of Myasthenia Gravis and that fetal calf antigen cannot replace human antigen in the assay.
CT Animals
*Autoantibodies: AN, analysis
Bungarotoxins: DU, diagnostic use
Cattle
Humans
Immunologic Tests: MT, methods
*Myasthenia Gravis: DI, diagnosis
Myasthenia Gravis: IM, immunology
Predictive Value of Tests
*Receptors, Nicotinic: IM, immunology
Research Support, Non-U.S. Gov't
RN **77097-81-5 (iodo-alpha-bungarotoxin)**
CN 0 (Autoantibodies); 0 (Bungarotoxins); 0 (Receptors, Nicotinic)

=> file toxcenter
COST IN U.S. DOLLARS SINCE FILE TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	2.59	4.57

FILE 'TOXCENTER' ENTERED AT 15:55:21 ON 04 MAY 2005

FILE COVERS 1907 TO 3 May 2005 (20050503/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TOXCENTER has been enhanced with new files segments and search fields.
See HELP CONTENT for more information.

TOXCENTER thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary. See http://www.nlm.nih.gov/mesh/ and http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html for a description of changes.

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=> s bungarotoxin and (rheumatoid arthritis or RA)
          6320 BUNGAROTOXIN
         25468 RHEUMATOID
         35583 ARTHRITIS
         20209 RHEUMATOID ARTHRITIS
                 (RHEUMATOID(W)ARTHRITIS)
         38265 RA
L3           6 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-6 bib

L3   ANSWER 1 OF 6  TOXCENTER COPYRIGHT 2005 ACS on STN
AN   1995:163226  TOXCENTER
CP   Copyright 2005 ACS
DN   CA12301007672N
TI   Measurement of anti-acetylcholine receptor antibody using human
     rhabdomyosarcoma cell line
AU   Ito, Rie; Ishiguro, Yayoi; Tetsumoto, Toru; Harada, Hirotomo; Takanashi,
     Naoki; Oka, Masanori; Shindo, Yukiko; Yamauchi, Shigeki; Ishigami,
     Tatsuzo; et al.
CS   Dep. Diagn. Reagent, SRL Inc., Hachioji, 192, Japan.
SO   Rinsho Byori, (1995) Vol. 43, No. 4, pp. 402-8.
     CODEN: RBYOAI. ISSN: 0047-1860.
CY   JAPAN
DT   Journal
FS   CAPLUS
OS   CAPLUS 1995:527188
LA   Japanese
ED   Entered STN: 20011116
     Last Updated on STN: 20020903

L3   ANSWER 2 OF 6  TOXCENTER COPYRIGHT 2005 ACS on STN
AN   1992:139193  TOXCENTER
CP   Copyright 2005 ACS
DN   CA11623228778J
TI   Muscarinic binding sites in a catecholaminergic human neuroblastoma cell
     line
AU   Sorrentino, Giuseppe; Singh, Indrapal N.; Hubsch, Alphonse; Kanfer, Julian
     N.; Mykita, Serge; Massarelli, Raphael
CS   Dep. Biochem. Mol. Biol., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can..
SO   Neurochemical Research, (1992) Vol. 17, No. 3, pp. 215-22.
     CODEN: NEREDZ. ISSN: 0364-3190.
CY   CANADA
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DT Journal
FS CAPLUS
OS CAPLUS 1992:228778
LA English
ED Entered STN: 20011116
Last Updated on STN: 20021008

L3 ANSWER 3 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
AN 1987:96704 TOXCENTER
CP Copyright (c) 2005 The Thomson Corporation
DN PREV198733095675
TI THE USEFULNESS OF A QUALITATIVE ASSAY FOR ACETYLCHOLINE RECEPTOR ANTIBODIES IN THE DIAGNOSIS OF MYASTHENIA GRAVIS
AU OGER J [Reprint author]
CS VANCOUVER, BC
SO Canadian Journal of Neurological Sciences, (1987) Vol. 14, No. 2, pp. 218.
Meeting Info.: XXIIND CANADIAN CONGRESS OF NEUROLOGICAL SCIENCES, VANCOUVER, BRITISH COLUMBIA, CANADA, JUNE 24-27, 1987. CAN J NEUROL SCI
CODEN: CJNSA2. ISSN: 0317-1671.
DT Conference; (Meeting)
FS BIOSIS
OS BIOSIS 1987:436848
LA ENGLISH
ED Entered STN: 20011116
Last Updated on STN: 20011116

L3 ANSWER 4 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
AN 1983:64825 TOXCENTER
CP Copyright (c) 2005 The Thomson Corporation
DN PREV198375007531
TI D PENICILLAMINE ASSOCIATED MYASTHENIA GRAVIS IMMUNOLOGICAL AND ELECTRO PHYSIOLOGICAL STUDIES
AU FAWCETT P R W [Reprint author]; MCLACHLAN S M; NICHOLSON L V B; ARGOV Z; MASTAGLIA F L
CS MUSCULAR DYSTROPHY GROUP RES LAB, REGIONAL NEUROLOGICAL CENT, NEWCASTLE-UPON-TYNE, ENGL, UK
SO Muscle and Nerve, (1982) Vol. 5, No. 4, pp. 328-334.
CODEN: MUNEDE. ISSN: 0148-639X.
DT Article
FS BIOSIS
OS BIOSIS 1983:157531
LA ENGLISH
ED Entered STN: 20011116
Last Updated on STN: 20011116

L3 ANSWER 5 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
AN 1982:35008 TOXCENTER
DN PubMed ID: 7099199
TI D-Penicillamine-associated myasthenia gravis: immunological and electrophysiological studies
AU Fawcett P R; McLachlan S M; Nicholson L V; Argov Z; Mastaglia F L
SO Muscle & nerve, (1982 Apr) 5 (4) 328-34.
Journal Code: 7803146. ISSN: 0148-639X.
CY United States
DT (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
FS MEDLINE
OS MEDLINE 82245448
LA English
ED Entered STN: 20011116
Last Updated on STN: 20011116

L3 ANSWER 6 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
AN 1980:39382 TOXCENTER
CP Copyright (c) 2005 The Thomson Corporation

DN PREV198018031039
TI MYASTHENIA ASSOCIATED WITH D PENICILLAMINE THERAPY IN **RHEUMATOID ARTHRITIS**
AU BUCKNALL R C [Reprint author]; BALINT G; DAWKINS R L
CS DEP MED, UNIV BRISTOL R INFIRM, BRISTOL BS2 8HW, ENGL, UK
SO Scandinavian Journal of Rheumatology Supplement, (1979) No. 28, pp. 91-93.
Meeting Info.: PROCEEDINGS OF THE 2ND BERTINE KOPERBERG CONFERENCE ON FUNDAMENTAL STUDIES ON PENICILLAMINE FOR RHEUMATOID DISEASES, OOSTERBECK, NETHERLANDS, SEPT. 14-15, 1978. SCAND J RHEUMATOL SUPPL
CODEN: SJRSAS. ISSN: 0301-3847.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
FS BIOSIS
OS BIOSIS 1980:31039
LA ENGLISH
ED Entered STN: 20011116
Last Updated on STN: 20011116

=> d 6 all

L3 ANSWER 6 OF 6 TOXCENTER COPYRIGHT 2005 ACS on STN
AN 1980:39382 TOXCENTER
CP Copyright (c) 2005 The Thomson Corporation
DN PREV198018031039
TI MYASTHENIA ASSOCIATED WITH D PENICILLAMINE THERAPY IN **RHEUMATOID ARTHRITIS**
AU BUCKNALL R C [Reprint author]; BALINT G; DAWKINS R L
CS DEP MED, UNIV BRISTOL R INFIRM, BRISTOL BS2 8HW, ENGL, UK
SO Scandinavian Journal of Rheumatology Supplement, (1979) No. 28, pp. 91-93.
Meeting Info.: PROCEEDINGS OF THE 2ND BERTINE KOPERBERG CONFERENCE ON FUNDAMENTAL STUDIES ON PENICILLAMINE FOR RHEUMATOID DISEASES, OOSTERBECK, NETHERLANDS, SEPT. 14-15, 1978. SCAND J RHEUMATOL SUPPL
CODEN: SJRSAS. ISSN: 0301-3847.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
FS BIOSIS
OS BIOSIS 1980:31039
LA ENGLISH
ED Entered STN: 20011116
Last Updated on STN: 20011116
CC General biology - Symposia, transactions and proceedings 00520
Genetics - Human 03508
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Biophysics - Methods and techniques 10504
Pathology - Comparative 12503
Pathology - Diagnostic 12504
Pathology - Inflammation and inflammatory disease 12508
Pathology - Therapy 12512
Metabolism - Carbohydrates 13004
Metabolism - Minerals 13010
Metabolism - Proteins, peptides and amino acids 13012
Metabolism - Metabolic disorders 13020
Digestive system - Pathology 14006
Blood - Blood, lymphatic and reticuloendothelial pathologies 15006
Muscle - Pathology 17506
Bones, joints, fasciae, connective and adipose tissue - Pathology 18006
Dental biology - Physiology and biochemistry 19004
Nervous system - Pathology 20506
Pharmacology - Drug metabolism and metabolic stimulators 22003
Pharmacology - Clinical pharmacology 22005
Pharmacology - Connective tissue, bone and collagen-acting drugs 22012
Pharmacology - Digestive system 22014

Pharmacology - Immunological processes and allergy 22018
Pharmacology - Neuropharmacology 22024
Routes of immunization, infection and therapy 22100
Toxicology - General and methods 22501
Toxicology - Pharmacology 22504
Gerontology - 24500
Immunology - General and methods 34502
Immunology - Immunopathology, tissue immunology 34508
ST Major Concepts
Clinical Endocrinology (Human Medicine, Medical Sciences); Gastroenterology (Human Medicine, Medical Sciences); Metabolism; Muscular System (Movement and Support); Neurology (Human Medicine, Medical Sciences); Pathology; Pharmacology; Skeletal System (Movement and Support); Toxicology
ST Miscellaneous Descriptors
NOTE HUMAN ANTIBODY BUNGARO TOXIN ACETYL CHOLINE RECEPTOR PROTEIN WILSONS DISEASE AUTO IMMUNE DISEASE SIDE EFFECT AGE
ORGN Classifier
Serpentes 85410
Super Taxa
Reptilia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Nonhuman Vertebrates, Reptiles, Vertebrates
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
RN 52-67-5 (D-PENICILLAMINE)
37209-28-2 (**BUNGAROTOXIN**)
51-84-3 (ACETYLCHOLINE)

=> d 6 full
'FULL' IS NOT A VALID FORMAT FOR FILE 'TOXCENTER'

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ABS ---- AN, CP, AB
ALL ---- AN, CP, DN, TI, CM, AU, CS, CSS, NC, ON,
PI, SO, CY, DT, FS, OS, LA, SL, ED, DB, DE,
AB, SC, CC, BC, CT, ST, CO, NA, GT, ORGN,
RN, CN, GEN
BIB ---- AN, CP, DN, TI, CM, AU, CS, CSS, NC, ON,
PI, SO, CY, DT, FS, OS, LA, SL, ED, DB, DE
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DALL --- Displays the same data as ALL.
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IALL --- Displays the same data as ALL.
IBIB --- Displays the same data as BIB.
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RN, CN, GEN
SCAN --- TI, CM, CN
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HITIND - Displays the same data as IND.
KWIC --- Displays 20 words on either side of a hit term.
OCC ---- Displays field name and number of occurrances where hit
terms are found.

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=> file caplus
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	9.77	14.34

FILE 'CAPLUS' ENTERED AT 15:57:13 ON 04 MAY 2005
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FILE COVERS 1907 - 4 May 2005 VOL 142 ISS 19
FILE LAST UPDATED: 3 May 2005 (20050503/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s bungarotoxin and (rheumatoid arthritis or RA)
3510 BUNGAROTOXIN
25379 RHEUMATOID
36436 ARTHRITIS
22147 RHEUMATOID ARTHRITIS
(RHEUMATOID(W)ARTHRITIS)
37814 RA
L4 4 BUNGAROTOXIN AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1-4 bib

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:513538 CAPLUS
DN 141:65099
TI Inhibition of inflammation using α7 nicotinic receptor-binding cholinergic agonists
IN Tracey, Kevin J.; Wang, Hong
PA North Shore-Long Island Jewish Research Institute, USA
SO PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	WO 2004052365	A2	20040624	WO 2003-US38708	20031205
	WO 2004052365	A3	20040923		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2004204355	A1	20041014	US 2003-729427	20031205
PRAI	US 2002-431650P	P	20021206		
OS	MARPAT 141:65099				

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:868225 CAPLUS
DN 136:625
TI Inhibition of inflammatory cytokine production by cholinergic agonists and vagus nerve stimulation
IN Tracey, Kevin J.
PA North Shore-Long Island Jewish Research Institute, USA
SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001089526	A1	20011129	WO 2001-US15708	20010516
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002016344	A1	20020207	US 2001-855446	20010515
	US 6610713	B2	20030826		
	CA 2408791	AA	20011129	CA 2001-2408791	20010516
	EP 1307196	A1	20030507	EP 2001-935542	20010516
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004510695	T2	20040408	JP 2001-585770	20010516
	US 2004038857	A1	20040226	US 2003-446625	20030528
	US 6838471	B2	20050104		
PRAI	US 2000-206364P	P	20000523		
	US 2001-855446	A	20010515		
	WO 2001-US15708	W	20010516		

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:527188 CAPLUS
DN 123:7672
TI Measurement of anti-acetylcholine receptor antibody using human rhabdomyosarcoma cell line
AU Ito, Rie; Ishiguro, Yayoi; Tetsumoto, Toru; Harada, Hirotomo; Takanashi, Naoki; Oka, Masanori; Shindo, Yukiko; Yamauchi, Shigeki; Ishigami, Tatsuzo; et al.
CS Dep. Diagn. Reagent, SRL Inc., Hachioji, 192, Japan

SO Rinsho Byori (1995), 43(4), 402-8
CODEN: RBYOAI; ISSN: 0047-1860
DT Journal
LA Japanese

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:228778 CAPLUS
DN 116:228778
TI Muscarinic binding sites in a catecholaminergic human neuroblastoma cell line
AU Sorrentino, Giuseppe; Singh, Indrapal N.; Hubsch, Alphonse; Kanfer, Julian N.; Mykita, Serge; Massarelli, Raphael
CS Dep. Biochem. Mol. Biol., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SO Neurochemical Research (1992), 17(3), 215-22
CODEN: NEREDZ; ISSN: 0364-3190
DT Journal
LA English

=> file medline
COST IN U.S. DOLLARS SINCE FILE ENTRY 13.31 TOTAL SESSION 27.65
FULL ESTIMATED COST

FILE 'MEDLINE' ENTERED AT 15:58:45 ON 04 MAY 2005

FILE LAST UPDATED: 3 MAY 2005 (20050503/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

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http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> s (alpha7 or alpha-7 or alpha 7)(L)(tnf or tumor necrosis factor)
          978 ALPHA7
       521802 ALPHA
      1376236 7
         1418 ALPHA-7
                (ALPHA(W)7)
       521802 ALPHA
      1376236 7
         1418 ALPHA 7
                (ALPHA(W)7)
        50065 TNF
       594700 TUMOR
       156643 NECROSIS
       682620 FACTOR
        65608 TUMOR NECROSIS FACTOR
                (TUMOR(W)NECROSIS(W)FACTOR)
L5          36 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(L)(TNF OR TUMOR NECROSIS FACTOR)

=> d 1-36 bib

L5 ANSWER 1 OF 36 MEDLINE on STN
```

AN 2005176582 IN-PROCESS
DN PubMed ID: 15809354
TI Cholinergic stimulation blocks endothelial cell activation and leukocyte recruitment during inflammation.
AU Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara; Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz Christine N
CS North Shore-LIJ, Manhasset, NY 11030.
SO Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23. Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050406
Last Updated on STN: 20050406

L5 ANSWER 2 OF 36 MEDLINE on STN
AN 2005151682 IN-PROCESS
DN PubMed ID: 15785303
TI Growth hormone-induced reduction of soluble apoptosis mediators is associated with reverse cardiac remodelling and improvement of exercise capacity in patients with idiopathic dilated cardiomyopathy.
AU Parissis John T; Adamopoulos Stamatis; Karatzas Dimitrios; Paraskevaidis John; Livanis Efthimios; Kremastinos Dimitrios
CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Centre Athens, Greece.
SO European journal of cardiovascular prevention and rehabilitation : official journal of the European Society of Cardiology, Working Groups on Epidemiology & Prevention and Cardiac Rehabilitation and Exercise Physiology, (2005 Apr) 12 (2) 164-8. Journal code: 101192000. ISSN: 1741-8267.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050324
Last Updated on STN: 20050324

L5 ANSWER 3 OF 36 MEDLINE on STN
AN 2005011836 IN-PROCESS
DN PubMed ID: 15636707
TI Protective effect of the cholinergic anti-inflammatory pathway against hemorrhagic shock in rats.
AU Li Jian-guo; Hu Zheng-fang; Du Zhao-hui; Zhou Qing; Jia Bao-hui; Peng Zhou-quan; Ye Xiao-feng; Li Bei
CS Zhongnan Hospital, Wuhan University, Wuhan 430071, Hubei, China.
SO Zhongguo wei zhong bing ji jiu yi xue = Chinese critical care medicine = Zhongguo weizhongbing jijiuyixue, (2005 Jan) 17 (1) 24-7. Journal code: 9887521. ISSN: 1003-0603.
CY China
DT Journal; Article; (JOURNAL ARTICLE)
LA Chinese
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050108
Last Updated on STN: 20050413

L5 ANSWER 4 OF 36 MEDLINE on STN
AN 2004610297 IN-PROCESS
DN PubMed ID: 15498533
TI Induced sputum in cystic fibrosis: within-week reproducibility of inflammatory markers.
AU Smountas Argyrios A; Lands Larry C; Mohammed Shawn R; Grey Vijaylaxmi
CS Department of Respiratory Medicine, McGill University Medical Centre, Montreal Children's Hospital, Montreal, 2300 Tupper Street, Montreal,

Quebec, Canada H3H 1P3.
SO Clinical biochemistry, (2004 Nov) 37 (11) 1031-6.
Journal code: 0133660. ISSN: 0009-9120.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20041209
Last Updated on STN: 20041219

L5 ANSWER 5 OF 36 MEDLINE on STN
AN 2004545484 MEDLINE
DN PubMed ID: 15502843
TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.
CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907
AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis
CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
Journal code: 9502015. ISSN: 1078-8956.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200502
ED Entered STN: 20041102
Last Updated on STN: 20050205
Entered Medline: 20050204

L5 ANSWER 6 OF 36 MEDLINE on STN
AN 2004436284 MEDLINE
DN PubMed ID: 15342104
TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.
AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F
CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.
SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
Journal code: 7605818. ISSN: 0361-9230.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200411
ED Entered STN: 20040903
Last Updated on STN: 20041219
Entered Medline: 20041129

L5 ANSWER 7 OF 36 MEDLINE on STN
AN 2004386823 MEDLINE
DN PubMed ID: 15290911
TI Circulating monocytes and plasma inflammatory biomarkers in active Crohn's disease: elevated oxidized low-density lipoprotein and the anti-inflammatory effect of atorvastatin.
AU Grip Olof; Janciauskiene Sabina; Lindgren Stefan
CS Gastroenterology and Hepatology Division, Department of Medicine, Lund University, Malmo University Hospital, Malmo, Sweden..
olof.grip@medforsk.mas.lu.se
SO Inflammatory bowel diseases, (2004 May) 10 (3) 193-200.

Journal code: 9508162. ISSN: 1078-0998.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200409
ED Entered STN: 20040805
Last Updated on STN: 20040924
Entered Medline: 20040923

L5 ANSWER 8 OF 36 MEDLINE on STN
AN 2004305950 MEDLINE
DN PubMed ID: 14993259
TI The expression and functional role of nicotinic acetylcholine receptors in rat adipocytes.
AU Liu Run-Hua; Mizuta Masanari; Matsukura Shigeru
CS Third Department of Internal Medicine, Miyazaki Medical College, Miyazaki University, Kiyotake, Miyazaki, Japan.
SO Journal of pharmacology and experimental therapeutics, (2004 Jul) 310 (1) 52-8. Electronic Publication: 2004-03-01.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200409
ED Entered STN: 20040624
Last Updated on STN: 20040908
Entered Medline: 20040907

L5 ANSWER 9 OF 36 MEDLINE on STN
AN 2004163757 MEDLINE
DN PubMed ID: 15056277
TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.
AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun
CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medciine, Tampa, Florida, USA.
SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200405
ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

L5 ANSWER 10 OF 36 MEDLINE on STN
AN 2003579397 MEDLINE
DN PubMed ID: 14659770
TI Effects of growth hormone on circulating cytokine network, and left ventricular contractile performance and geometry in patients with idiopathic dilated cardiomyopathy.
CM Comment in: Eur Heart J. 2003 Dec;24(24):2164-5. PubMed ID: 14659767
AU Adamopoulos Stamatis; Parissis John T; Paraskevaidis Ioannis; Karatzas Dimitrios; Livanis Efthimios; Georgiadis Michael; Karavolias George; Mitropoulos Dimitrios; Degiannis Dimitrios; Kremastinos Dimitrios Th
CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Center, Athens, Greece.. sadamo@bigfoot.com
SO European heart journal, (2003 Dec) 24 (24) 2186-96.
Journal code: 8006263. ISSN: 0195-668X.

CY England: United Kingdom
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 200402
ED Entered STN: 20031216
Last Updated on STN: 20040211
Entered Medline: 20040210

L5 ANSWER 11 OF 36 MEDLINE on STN
AN 2003509329 MEDLINE
DN PubMed ID: 14506129
TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
Journal code: 9208958. ISSN: 0964-6906.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200407
ED Entered STN: 20031031
Last Updated on STN: 20040709
Entered Medline: 20040708

L5 ANSWER 12 OF 36 MEDLINE on STN
AN 2003354091 MEDLINE
DN PubMed ID: 12730063
TI Age-associated impairment in TNF-alpha cardioprotection from myocardial infarction.
AU Cai Dongqing; Xaymardan Munira; Holm Jacquelyne M; Zheng Jingang; Kizer Jorge R; Edelberg Jay M
CS Department of Medicine, Weill Medical College of Cornell University, 520 East 70th Street, A352, New York, NY 10021, USA.
NC AG 20320 (NIA)
AG 20918 (NIA)
SO American journal of physiology. Heart and circulatory physiology, (2003 Aug) 285 (2) H463-9. Electronic Publication: 2003-05-01.
Journal code: 100901228. ISSN: 0363-6135.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200308
ED Entered STN: 20030731
Last Updated on STN: 20030822
Entered Medline: 20030821

L5 ANSWER 13 OF 36 MEDLINE on STN
AN 2003115931 MEDLINE
DN PubMed ID: 12628466
TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.
AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.

CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404

L5 ANSWER 14 OF 36 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307

L5 ANSWER 15 OF 36 MEDLINE on STN
AN 2002359187 MEDLINE
DN PubMed ID: 12102593
TI Cytotoxic reaction and TNF-alpha response of macrophages to polyurethane particles.
AU Ma Nan; Petit Alain; Yahia L'Hocine; Huk Olga L; Tabrizian Maryam
CS GRBB, Biomedical Engineering Institute, Ecole Polytechnique, Montreal, QC, Canada.
SO Journal of biomaterials science. Polymer edition, (2002) 13 (3) 257-72.
Journal code: 9007393. ISSN: 0920-5063.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200306
ED Entered STN: 20020710
Last Updated on STN: 20030624
Entered Medline: 20030623

L5 ANSWER 16 OF 36 MEDLINE on STN
AN 2002319179 MEDLINE
DN PubMed ID: 12061429
TI Serum levels of TNF-alpha, sIL-2R, IL-6, and IL-8 are increased and associated with elevated lipid peroxidation in patients with Behcet's disease.
AU Evereklioglu Cem; Er Hamdi; Turkoz Yusuf; Cekmen Mustafa
CS Department of Ophthalmology, Gaziantep University Medical Faculty, Research Hospital, Turkey.. everekliogl u@hotmail.com
SO Mediators of inflammation, (2002 Apr) 11 (2) 87-93.
Journal code: 9209001. ISSN: 0962-9351.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)

LA English
FS Priority Journals
EM 200212
ED Entered STN: 20020614
Last Updated on STN: 20021217
Entered Medline: 20021210

L5 ANSWER 17 OF 36 MEDLINE on STN
AN 2002127489 MEDLINE
DN PubMed ID: 11849865
TI Physical training modulates proinflammatory cytokines and the soluble Fas/soluble Fas ligand system in patients with chronic heart failure.
AU Adamopoulos Stamatis; Parissis John; Karatzas Dimitrios; Kroupis Christos; Georgiadis Michael; Karavolias George; Paraskevaidis John; Koniavitou Katerina; Coats Andrew J S; Kremastinos Dimitrios Th
CS Second Department of Cardiovascular Medicine, Onassis Cardiac Surgery Center, Athens, Greece.. sadamo@bigfoot.com
SO Journal of the American College of Cardiology, (2002 Feb 20) 39 (4) 653-63.
Journal code: 8301365. ISSN: 0735-1097.
CY United States
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200203
ED Entered STN: 20020227
Last Updated on STN: 20020322
Entered Medline: 20020321

L5 ANSWER 18 OF 36 MEDLINE on STN
AN 2001669027 MEDLINE
DN PubMed ID: 11714820
TI Involvement of nicotinic acetylcholine receptors in suppression of antimicrobial activity and cytokine responses of alveolar macrophages to Legionella pneumophila infection by nicotine.
AU Matsunaga K; Klein T W; Friedman H; Yamamoto Y
CS Department of Medical Microbiology and Immunology, University of South Florida College of Medicine, Tampa, FL 33612, USA.
NC AI45169 (NIAID)
SO Journal of immunology (Baltimore, Md. : 1950), (2001 Dec 1) 167 (11) 6518-24.
Journal code: 2985117R. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200201
ED Entered STN: 20011121
Last Updated on STN: 20020124
Entered Medline: 20020102

L5 ANSWER 19 OF 36 MEDLINE on STN
AN 2001531775 MEDLINE
DN PubMed ID: 11578014
TI Randomized, double-blind trial of anti-interferon-gamma antibodies in rheumatoid arthritis.
AU Sigidin Y A; Loukina G V; Skurkovich B; Skurkovich S
CS Rheumatology Institute, Russian Academy of Medical Sciences, Moscow.
SO Scandinavian journal of rheumatology, (2001) 30 (4) 203-7.
Journal code: 0321213. ISSN: 0300-9742.
CY Norway
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)

(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 200110
ED Entered STN: 20011002
Last Updated on STN: 20011022
Entered Medline: 20011018

L5 ANSWER 20 OF 36 MEDLINE on STN
AN 2001463119 MEDLINE
DN PubMed ID: 11488976
TI Recruitment of mononuclear leucocytes to osteoarthritic human synovial xenografts in the ears of SCID mice.
AU Cleland L G; Fusco M; Proudman S M; Wing S J; Spargo L D; Mayrhofer G
CS The Arthritis Research Laboratory of the Hanson Centre for Cancer Research, Institute of Medical and Veterinary Science, University of Adelaide, Adelaide, Australia.. lcleland@mail.rah.sa.gov.au
SO Immunology and cell biology, (2001 Aug) 79 (4) 309-19.
Journal code: 8706300. ISSN: 0818-9641.
CY Australia
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200112
ED Entered STN: 20010820
Last Updated on STN: 20020121
Entered Medline: 20011205

L5 ANSWER 21 OF 36 MEDLINE on STN
AN 2001423435 MEDLINE
DN PubMed ID: 11312628
TI Effect of hypoxia, oxidative stress and lipopolysaccharides on the release of prostaglandins and cytokines from human term placental explants.
AU Malek A; Sager R; Schneider H
CS Department of Obstetrics and Gynecology, University of Berne, Inselspital, Switzerland.
SO Placenta, (2001 Apr) 22 Suppl A S45-50.
Journal code: 8006349. ISSN: 0143-4004.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200107
ED Entered STN: 20010730
Last Updated on STN: 20021219
Entered Medline: 20010726

L5 ANSWER 22 OF 36 MEDLINE on STN
AN 2001009563 MEDLINE
DN PubMed ID: 11008069
TI Expression of proinflammatory cytokines in the failing human heart: comparison of recent-onset and end-stage congestive heart failure.
AU Kubota T; Miyagishima M; Alvarez R J; Kormos R; Rosenblum W D; Demetris A J; Semigran M J; Dec G W; Holubkov R; McTiernan C F; Mann D L; Feldman A M; McNamara D M
CS Cardiovascular Institute of the UPMC Health System, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania 15213, USA.
SO Journal of heart and lung transplantation : official publication of the International Society for Heart Transplantation, (2000 Sep) 19 (9) 819-24.
Journal code: 9102703. ISSN: 1053-2498.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200010

ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001023

L5 ANSWER 23 OF 36 MEDLINE on STN
AN 2000265106 MEDLINE
DN PubMed ID: 10804903
TI Diminished chemokine and cytokine-induced adhesion of CD4+ T cells to extracellular matrix ligands in patients with end-stage renal failure.
AU Zeltzer E; Bernheim J; Korzets Z; Zeeli D; Rathaus M; Mekori Y A; Hershkoviz R
CS Department of Nephrology, Sapir Medical Center, Kfar Saba, Israel.
SO Israel Medical Association journal : IMAJ, (2000 Apr) 2 (4) 282-6.
Journal code: 100930740. ISSN: 1565-1088.
CY Israel
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200005
ED Entered STN: 20000606
Last Updated on STN: 20000606
Entered Medline: 20000524

L5 ANSWER 24 OF 36 MEDLINE on STN
AN 1999370456 MEDLINE
DN PubMed ID: 10441868
TI [The risk factors for the development of multiple sclerosis in the Moscow population. II. The combination of exogenous and hereditary factors].
Faktory riska razvitiia rasseiannogo skleroza v moskovskoi populiatsii. II. Sochetaniia ekzogennykh i nasledstvennykh faktorov.
AU Gusev E I; Boiko A N; Demina T L; Sudomoina M A; Alekseev A P; Boldyreva M. N; Trofimov D Iu; Favorova O O
SO Zhurnal nevrologii i psikhiatrii imeni S.S. Korsakova / Ministerstvo zdravookhraneniia i meditsinskoi promyshlennosti Rossiiskoi Federatsii, Vserossiiskoe obshchestvo nevrologov [i] Vserossiiskoe obshchestvo psikhiatrov, (1999) 99 (6) 47-52.
Journal code: 9712194.
CY RUSSIA: Russian Federation
DT Journal; Article; (JOURNAL ARTICLE)
LA Russian
FS Priority Journals
EM 199908
ED Entered STN: 19990913
Last Updated on STN: 19990913
Entered Medline: 19990830

L5 ANSWER 25 OF 36 MEDLINE on STN
AN 1999365012 MEDLINE
DN PubMed ID: 10434040
TI Stimulation of serglycin and CD44 mRNA expression in endothelial cells exposed to TNF-alpha and IL-1alpha.
AU Kulseth M A; Kolset S O; Ranheim T
CS Institute for Nutrition Research, Faculty of Medicine, University of Oslo, P.O. Box 1046, Blindern, N-0316, Oslo, Norway.
SO Biochimica et biophysica acta, (1999 Aug 5) 1428 (2-3) 225-32.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199909
ED Entered STN: 19991012
Last Updated on STN: 19991012
Entered Medline: 19990927

L5 ANSWER 26 OF 36 MEDLINE on STN
AN 1999188557 MEDLINE
DN PubMed ID: 10090171
TI Fibroblast proliferation by bleomycin stimulated peripheral blood mononuclear cell factors.
AU Yamamoto T; Katayama I; Nishioka K
CS Department of Dermatology, Tokyo Medical and Dental University, School of Medicine, Japan.
SO Journal of rheumatology, (1999 Mar) 26 (3) 609-15.
Journal code: 7501984. ISSN: 0315-162X.
CY Canada
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199905
ED Entered STN: 19990525
Last Updated on STN: 19990525
Entered Medline: 19990507

L5 ANSWER 27 OF 36 MEDLINE on STN
AN 1998037087 MEDLINE
DN PubMed ID: 9370119
TI Raised plasma concentrations of parathyroid hormone related peptide in hypercalcemic multiple myeloma.
AU Horiuchi T; Miyachi T; Arai T; Nakamura T; Mori M; Ito H
CS Section of Endocrinology, Tokyo Metropolitan Geriatric Hospital, Japan.
SO Hormone and metabolic research. Hormon- und Stoffwechselforschung. Hormones et metabolisme, (1997 Sep) 29 (9) 469-71.
Journal code: 0177722. ISSN: 0018-5043.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980109
Last Updated on STN: 19980109
Entered Medline: 19971222

L5 ANSWER 28 OF 36 MEDLINE on STN
AN 97280005 MEDLINE
DN PubMed ID: 9134379
TI Daily variation in circulating cytokines and acute-phase proteins correlates with clinical and laboratory indices in community-acquired pneumonia.
AU Kosmas E N; Baxevanis C N; Papamichail M; Kordossis T
CS Department of Pulmonary Medicine, A. Fleming General Hospital, Greece.
SO European journal of clinical investigation, (1997 Apr) 27 (4) 308-15.
Journal code: 0245331. ISSN: 0014-2972.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199706
ED Entered STN: 19970709
Last Updated on STN: 19970709
Entered Medline: 19970626

L5 ANSWER 29 OF 36 MEDLINE on STN
AN 96206224 MEDLINE
DN PubMed ID: 8620605
TI Modification of viral myocarditis in mice by interleukin-6.
AU Kanda T; McManus J E; Nagai R; Imai S; Suzuki T; Yang D; McManus B M; Kobayashi I
CS Department of Laboratory Medicine, Gunma University School of Medicine, Maebashi, Japan.

SO Circulation research, (1996 May) 78 (5) 848-56.
Journal code: 0047103. ISSN: 0009-7330.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199606
ED Entered STN: 19960627
Last Updated on STN: 19960627
Entered Medline: 19960618

L5 ANSWER 30 OF 36 MEDLINE on STN
AN 96005176 MEDLINE
DN PubMed ID: 7548640
TI [Alpha tumor necrosis factor in central nervous system disease associated with HIV infection].
El factor de necrosis tumoral alfa en la afectacion del sistema nervioso central asociada a la infeccion por el VIH.
AU Calvo Manuel E; Arranz Garcia F; Sanchez-Portocarrero J; Roca Arbones V; Puente M; Elias Arcalis A; Perez-Cecilia E; Nieto Sanchez A; Espinos Perez D
CS Servicio de Medicina Interna I, Hospital Universitario San Carlos, Facultad de Medicina, Universidad Complutense, Madrid.
SO Anales de medicina interna (Madrid, Spain : 1984), (1995 Jun) 12 (6) 263-6.
Journal code: 9112183. ISSN: 0212-7199.
CY Spain
DT Journal; Article; (JOURNAL ARTICLE)
LA Spanish
FS Priority Journals; AIDS
EM 199511
ED Entered STN: 19951227
Last Updated on STN: 19970203
Entered Medline: 19951120

L5 ANSWER 31 OF 36 MEDLINE on STN
AN 96003447 MEDLINE
DN PubMed ID: 7561114
TI Isoforms of human C4b-binding protein. II. Differential modulation of the C4BPA and C4BPB genes by acute phase cytokines.
AU Criado Garcia O; Sanchez-Corral P; Rodriguez de Cordoba S
CS Department of Immunology, Center for Biological Investigations (CSIC), Velazquez, Madrid, Spain.
SO Journal of immunology (Baltimore, Md. : 1950), (1995 Oct 15) 155 (8) 4037-43.
Journal code: 2985117R. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199511
ED Entered STN: 19951227
Last Updated on STN: 19970203
Entered Medline: 19951122

L5 ANSWER 32 OF 36 MEDLINE on STN
AN 94171963 MEDLINE
DN PubMed ID: 8126130
TI Cytokine regulation of trophoblast steroidogenesis.
AU Feinberg B B; Anderson D J; Steller M A; Fulop V; Berkowitz R S; Hill J A
CS Fearing Research Laboratory, Department of Obstetrics, Gynecology, and Reproductive Biology, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts 02115.
NC HD-00815 (NICHD)
HD-23547 (NICHD)

SO Journal of clinical endocrinology and metabolism, (1994 Mar) 78 (3) 586-91.
Journal code: 0375362. ISSN: 0021-972X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199404
ED Entered STN: 19940420
Last Updated on STN: 19970203
Entered Medline: 19940412

L5 ANSWER 33 OF 36 MEDLINE on STN
AN 93347077 MEDLINE
DN PubMed ID: 8345430
TI Production of tumor necrosis factor by human cells in vitro and in vivo, induced by group B streptococci.
AU Williams P A; Bohnsack J F; Augustine N H; Drummond W K; Rubens C E; Hill H R
CS Department of Pathology, University of Utah School of Medicine, Salt Lake City 84132.
NC AI 13150 (NIAID)
AI 22498 (NIAID)
AI 26733 (NIAID)
SO Journal of pediatrics, (1993 Aug) 123 (2) 292-300.
Journal code: 0375410. ISSN: 0022-3476.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199309
ED Entered STN: 19930924
Last Updated on STN: 19930924
Entered Medline: 19930909

L5 ANSWER 34 OF 36 MEDLINE on STN
AN 93293642 MEDLINE
DN PubMed ID: 8514612
TI Lysosome labilizers potentiate the antitumor effects of tumor necrosis factor-alpha.
AU Masegi T; Kato A; Kitai K; Fukuoka M; Soma K; Ichikawa Y; Nakamura S; Watanabe N; Niitsu Y
CS Biotechnology Research Laboratories, Teijin Limited, Tokyo.
SO Japanese journal of cancer research : Gann, (1993 Apr) 84 (4) 451-4.
Journal code: 8509412. ISSN: 0910-5050.
CY Japan
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199307
ED Entered STN: 19930806
Last Updated on STN: 20000303
Entered Medline: 19930716

L5 ANSWER 35 OF 36 MEDLINE on STN
AN 93202697 MEDLINE
DN PubMed ID: 8454308
TI Interleukin-1 and tumor necrosis factor-mediated regulation of C3 gene expression in human astroglioma cells.
AU Barnum S R; Jones J L; Benveniste E N
CS Department of Microbiology, University of Alabama, Birmingham 35294.
NC NS29719 (NINDS)
SO Glia, (1993 Mar) 7 (3) 225-36.
Journal code: 8806785. ISSN: 0894-1491.
CY United States

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DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199304
ED   Entered STN: 19930507
     Last Updated on STN: 19970203
     Entered Medline: 19930422

L5   ANSWER 36 OF 36     MEDLINE on STN
AN   90028007     MEDLINE
DN   PubMed ID: 2803915
TI   Role of prostaglandins in tumour necrosis factor induced weight loss.
AU   Mahony S M; Tisdale M J
CS   CRC Experimental Chemotherapy Group, Aston University, Birmingham, UK.
SO   British journal of cancer, (1989 Jul) 60 (1) 51-5.
     Journal code: 0370635. ISSN: 0007-0920.
CY   ENGLAND: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   198912
ED   Entered STN: 19900328
     Last Updated on STN: 19900328
     Entered Medline: 19891218


=> s (alpha7 or alpha-7 or alpha 7)(S)nicotinic(L)(tnf or tumor necrosis factor)
          978 ALPHA7
       521802 ALPHA
      1376236 7
         1418 ALPHA-7
                (ALPHA(W)7)
       521802 ALPHA
      1376236 7
         1418 ALPHA 7
                (ALPHA(W)7)
        27029 NICOTINIC
        50065 TNF
       594700 TUMOR
       156643 NECROSIS
       682620 FACTOR
        65608 TUMOR NECROSIS FACTOR
                (TUMOR(W)NECROSIS(W)FACTOR)
L6         7 (ALPHA7 OR ALPHA-7 OR ALPHA 7)(S)NICOTINIC(L)(TNF OR TUMOR NECRO
             SIS FACTOR)

=> d 1-7 bib

L6   ANSWER 1 OF 7     MEDLINE on STN
AN   2005176582     IN-PROCESS
DN   PubMed ID: 15809354
TI   Cholinergic stimulation blocks endothelial cell activation and leukocyte
     recruitment during inflammation.
AU   Saeed Rubina W; Varma Santosh; Peng-Nemeroff Tina; Sherry Barbara;
     Balakhaneh David; Huston Jared; Tracey Kevin J; Al-Abed Yousef; Metz
     Christine N
CS   North Shore-LIJ, Manhasset, NY 11030.
SO   Journal of experimental medicine, (2005 Apr 4) 201 (7) 1113-23.
     Journal code: 2985109R. ISSN: 0022-1007.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED   Entered STN: 20050406
     Last Updated on STN: 20050406
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L6 ANSWER 2 OF 7 MEDLINE on STN
AN 2004545484 MEDLINE
DN PubMed ID: 15502843
TI Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis.
CM Comment in: Nat Med. 2004 Nov;10(11):1161-2. PubMed ID: 15516907
AU Wang Hong; Liao Hong; Ochani Mahendar; Justiniani Marilou; Lin Xinchun; Yang Lihong; Al-Abed Yousef; Wang Haichao; Metz Christine; Miller Edmund J; Tracey Kevin J; Ulloa Luis
CS The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature medicine, (2004 Nov) 10 (11) 1216-21. Electronic Publication: 2004-10-24.
Journal code: 9502015. ISSN: 1078-8956.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200502
ED Entered STN: 20041102
Last Updated on STN: 20050205
Entered Medline: 20050204

L6 ANSWER 3 OF 7 MEDLINE on STN
AN 2004436284 MEDLINE
DN PubMed ID: 15342104
TI Galantamine and nicotine have a synergistic effect on inhibition of microglial activation induced by HIV-1 gp120.
AU Giunta B; Ehrhart J; Townsend K; Sun N; Vendrame M; Shytle D; Tan J; Fernandez F
CS Neuroimmunology Laboratory, College of Medicine, University of South Florida, 3515 E. Fletcher Avenue, Tampa, FL 33613, USA.
SO Brain research bulletin, (2004 Aug 30) 64 (2) 165-70.
Journal code: 7605818. ISSN: 0361-9230.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200411
ED Entered STN: 20040903
Last Updated on STN: 20041219
Entered Medline: 20041129

L6 ANSWER 4 OF 7 MEDLINE on STN
AN 2004163757 MEDLINE
DN PubMed ID: 15056277
TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.
AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun
CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medcine, Tampa, Florida, USA.
SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200405
ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

L6 ANSWER 5 OF 7 MEDLINE on STN
AN 2003509329 MEDLINE
DN PubMed ID: 14506129
TI Identification of SLURP-1 as an epidermal neuromodulator explains the clinical phenotype of Mal de Meleda.
AU Chimienti Fabrice; Hogg Ronald C; Plantard Laure; Lehmann Caroline; Brakch Noureddine; Fischer Judith; Huber Marcel; Bertrand Daniel; Hohl Daniel
CS Laboratory for Cutaneous Biology, Dermatology Unit, Beaumont Hospital, CHUV, Lausanne, Switzerland.
SO Human molecular genetics, (2003 Nov 15) 12 (22) 3017-24. Electronic Publication: 2003-09-23.
Journal code: 9208958. ISSN: 0964-6906.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200407
ED Entered STN: 20031031
Last Updated on STN: 20040709
Entered Medline: 20040708

L6 ANSWER 6 OF 7 MEDLINE on STN
AN 2003115931 MEDLINE
DN PubMed ID: 12628466
TI A beta-induced TNF-alpha expression and acetylcholine action in mouse glial cells.
AU Nomura Jun; Hosoi Toru; Okuma Yasunobu; Nomura Yasuyuki
CS Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo 060-0812, Japan.
SO Life sciences, (2003 Mar 28) 72 (18-19) 2117-20.
Journal code: 0375521. ISSN: 0024-3205.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200304
ED Entered STN: 20030312
Last Updated on STN: 20030406
Entered Medline: 20030404

L6 ANSWER 7 OF 7 MEDLINE on STN
AN 2003033986 MEDLINE
DN PubMed ID: 12508119
TI Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator of inflammation.
CM Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira; Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed Yousef; Czura Christopher J; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO Nature, (2003 Jan 23) 421 (6921) 384-8. Electronic Publication: 2002-12-22.
Journal code: 0410462. ISSN: 0028-0836.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307

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FULL ESTIMATED COST                                     8.83      36.48

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                  (ROSPATENT) added to list of core patent offices covered
 NEWS  4  FEB 28  PATDPAFULL - New display fields provide for legal status
                  data from INPADOC
 NEWS  5  FEB 28  BABS - Current-awareness alerts (SDIs) available
 NEWS  6  FEB 28  MEDLINE/LMEDLINE reloaded
 NEWS  7  MAR 02  GBFULL: New full-text patent database on STN
 NEWS  8  MAR 03  REGISTRY/ZREGISTRY - Sequence annotations enhanced
 NEWS  9  MAR 03  MEDLINE file segment of TOXCENTER reloaded
 NEWS  10 MAR 22  KOREAPAT now updated monthly; patent information enhanced
 NEWS  11 MAR 22  Original IDE display format returns to REGISTRY/ZREGISTRY
 NEWS  12 MAR 22  PATDPASPC - New patent database available
 NEWS  13 MAR 22  REGISTRY/ZREGISTRY enhanced with experimental property tags
 NEWS  14 APR 04  EPFULL enhanced with additional patent information and new
                  fields
 NEWS  15 APR 04  EMBASE - Database reloaded and enhanced
 NEWS  16 APR 18  New CAS Information Use Policies available online
 NEWS  17 APR 25  Patent searching, including current-awareness alerts (SDIs),
                  based on application date in CA/CAplus and USPATFULL/USPAT2
                  may be affected by a change in filing date for U.S.
                  applications.
 NEWS  18 APR 28  Improved searching of U.S. Patent Classifications for
                  U.S. patent records in CA/CAplus

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               AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005
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COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

FILE 'MEDLINE' ENTERED AT 16:06:44 ON 04 MAY 2005

 FILE LAST UPDATED: 3 MAY 2005 (20050503/UP).  FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available.  For details enter HELP
 RLOAD at an arrow promt (=>).  See also:

   http://www.nlm.nih.gov/mesh/
   http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2005 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s bungarotoxin(L)inflamm?
          3230 BUNGAROTOXIN
        302840 INFLAMM?
L1          13 BUNGAROTOXIN(L)INFLAMM?

=> d 1-13 bib

L1   ANSWER 1 OF 13     MEDLINE on STN
AN   2005149848      IN-PROCESS
DN   PubMed ID: 15780465
TI   Antinociceptive effects of choline against acute and inflammatory pain.
AU   Wang Y; Su D-M; Wang R-H; Liu Y; Wang H
CS   Thadweik Academy of Medicine, Beijing 100850, PR China; Beijing Institute
     of Pharmacology and Toxicology, 27 Taiping Road, Beijing 100850, PR China.
SO   Neuroscience, (2005) 132 (1) 49-56.
     Journal code: 7605074. ISSN: 0306-4522.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
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ED Entered STN: 20050323
Last Updated on STN: 20050323

L1 ANSWER 2 OF 13 MEDLINE on STN
AN 2005011836 IN-PROCESS
DN PubMed ID: 15636707
TI Protective effect of the cholinergic anti-inflammatory pathway against hemorrhagic shock in rats.
AU Li Jian-guo; Hu Zheng-fang; Du Zhao-hui; Zhou Qing; Jia Bao-hui; Peng Zhou-quan; Ye Xiao-feng; Li Bei
CS Zhongnan Hospital, Wuhan University, Wuhan 430071, Hubei, China.
SO Zhongguo wei zhong bing ji jiu yi xue = Chinese critical care medicine = Zhongguo weizhongbing jijiuyixue, (2005 Jan) 17 (1) 24-7.
Journal code: 9887521. ISSN: 1003-0603.
CY China
DT Journal; Article; (JOURNAL ARTICLE)
LA Chinese
FS NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20050108
Last Updated on STN: 20050413

L1 ANSWER 3 OF 13 MEDLINE on STN
AN 2004163757 MEDLINE
DN PubMed ID: 15056277
TI Cholinergic modulation of microglial activation by alpha 7 nicotinic receptors.
AU Shytle R Douglas; Mori Takashi; Townsend Kirk; Vendrame Martina; Sun Nan; Zeng Jin; Ehrhart Jared; Silver Archie A; Sanberg Paul R; Tan Jun
CS Child Development Center, Neuroimmunology Laboratory, Department of Psychiatry and Behavioral Medicine, University of South Florida College of Medcine, Tampa, Florida, USA.
SO Journal of neurochemistry, (2004 Apr) 89 (2) 337-43.
Journal code: 2985190R. ISSN: 0022-3042.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200405
ED Entered STN: 20040402
Last Updated on STN: 20040505
Entered Medline: 20040504

L1 ANSWER 4 OF 13 MEDLINE on STN
AN 2003133844 MEDLINE
DN PubMed ID: 12648201
TI Chronic intraperitoneal endotoxin treatment in rats induces resistance to d-tubocurarine, but does not produce up-regulation of acetylcholine receptors.
AU Hinohara H; Morita T; Okano N; Kunimoto F; Goto F
CS Department of Anesthesiology and Reanimatology, Gunma University School of Medicine and Hospital, Maebashi, Japan.. hinohara@showa.gunma-u.ac.jp
SO Acta anaesthesiologica Scandinavica, (2003 Mar) 47 (3) 335-41.
Journal code: 0370270. ISSN: 0001-5172.
CY Denmark
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200306
ED Entered STN: 20030322
Last Updated on STN: 20030701
Entered Medline: 20030630

L1 ANSWER 5 OF 13 MEDLINE on STN
AN 2003008631 MEDLINE
DN PubMed ID: 12502983

TI Systemic inflammation leads to resistance to atracurium without increasing membrane expression of acetylcholine receptors.
AU Fink Heidrun; Luppa Peter; Mayer Barbara; Rosenbrock Hilkea; Metzger Jochen; Martyn J A Jeevendra; Blobner Manfred
CS Research Fellow, Klinik fur Anaesthesiologie der Technischen Universitat Munchen, Klinikum rechts der Isar, Germany.
NC GM 31569-19 (NIGMS)
GM 55082-06 (NIGMS)
GM 611411-4 (NIGMS)
SO Anesthesiology, (2003 Jan) 98 (1) 82-8.
Journal code: 1300217. ISSN: 0003-3022.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200301
ED Entered STN: 20030108
Last Updated on STN: 20030122
Entered Medline: 20030121

L1 ANSWER 6 OF 13 MEDLINE on STN
AN 2002432172 MEDLINE
DN PubMed ID: 12189247
TI A novel angiogenic pathway mediated by non-neuronal nicotinic acetylcholine receptors.
AU Heeschen Christopher; Weis Michael; Aicher Alexandra; Dimmeler Stefanie; Cooke John P
CS Division of Cardiovascular Medicine, Stanford University School of Medicine, Stanford, California 94305, USA.
NC 7RT-0128 (NHLBI)
R01 HL-58638
SO Journal of clinical investigation, (2002 Aug) 110 (4) 527-36.
Journal code: 7802877. ISSN: 0021-9738.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 200209
ED Entered STN: 20020822
Last Updated on STN: 20020907
Entered Medline: 20020906

L1 ANSWER 7 OF 13 MEDLINE on STN
AN 2002169257 MEDLINE
DN PubMed ID: 11901203
TI Pharmacological stimulation of the cholinergic antiinflammatory pathway.
CM Comment in: J Exp Med. 2002 Mar 18;195(6):F25-8. PubMed ID: 11901206
AU Bernik Thomas R; Friedman Steven G; Ochani Mahendar; DiRaimo Robert; Ulloa Luis; Yang Huan; Sudan Samridhi; Czura Christopher J; Ivanova Svetlana M; Tracey Kevin J
CS Laboratory of Biomedical Science, North Shore-LIJ Research Institute, 350 Community Drive, Manhasset, NY 11030, USA.
NC GM 62508 (NIGMS)
GM 63075 (NIGMS)
SO Journal of experimental medicine, (2002 Mar 18) 195 (6) 781-8.
Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200204
ED Entered STN: 20020320
Last Updated on STN: 20020417
Entered Medline: 20020416

L1 ANSWER 8 OF 13 MEDLINE on STN
AN 2000016180 MEDLINE
DN PubMed ID: 10549987
TI Alcohol blocks TNFalpha but not other cytokine-mediated neuroprotection to NMDA.
AU Gahring L C; Carlson N G; Wieggel W A; Howard J; Rogers S W
CS Salt Lake City Veterans Administration Medical Center, Department of Medicine, University of Utah School of Medicine, 84112-5330, USA.. lorise.gahring@hci.utah.edu
NC AA11418 (NIAAA)
NS35181 (NINDS)
SO Alcoholism, clinical and experimental research, (1999 Oct) 23 (10) 1571-9. Journal code: 7707242. ISSN: 0145-6008.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199911
ED Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991130

L1 ANSWER 9 OF 13 MEDLINE on STN
AN 1999371209 MEDLINE
DN PubMed ID: 10443609
TI Cecal ligation and puncture peritonitis model shows decreased nicotinic acetylcholine receptor numbers in rat muscle: immunopathologic mechanisms?.
CM Comment in: Anesthesiology. 1999 Aug;91(2):337-9. PubMed ID: 10443592
AU Tsukagoshi H; Morita T; Takahashi K; Kunimoto F; Goto F
CS Department of Anesthesiology and Reanimatology, Gunma University School of Medicine, Gunma-Ken, Japan.
SO Anesthesiology, (1999 Aug) 91 (2) 448-60. Journal code: 1300217. ISSN: 0003-3022.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199908
ED Entered STN: 19990827
Last Updated on STN: 19990827
Entered Medline: 19990819

L1 ANSWER 10 OF 13 MEDLINE on STN
AN 1998211893 MEDLINE
DN PubMed ID: 9552164
TI Nicotine blocks TNF-alpha-mediated neuroprotection to NMDA by an alpha-bungarotoxin-sensitive pathway.
AU Carlson N G; Bacchi A; Rogers S W; Gahring L C
CS Geriatric Research, Education and Clinical Center, Veterans Administration Medical Center, University of Utah School of Medicine, Salt Lake City 84112, USA.
NC AG04418 (NIA)
R01 AA11418 (NIAAA)
R01 NS35181 (NINDS)
SO Journal of neurobiology, (1998 Apr) 35 (1) 29-36. Journal code: 0213640. ISSN: 0022-3034.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199806
ED Entered STN: 19980625
Last Updated on STN: 19980625
Entered Medline: 19980615

L1 ANSWER 11 OF 13 MEDLINE on STN
AN 86028153 MEDLINE
DN PubMed ID: 4053172
TI Extravasation of polymorphonuclear leukocytes from the cerebral microvasculature. **Inflammatory** response induced by alpha-**bungarotoxin.**
AU Faustmann P M; Dermietzel R
SO Cell and tissue research, (1985) 242 (2) 399-407.
Journal code: 0417625. ISSN: 0302-766X.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198512
ED Entered STN: 19900321
Last Updated on STN: 19970203
Entered Medline: 19851210

L1 ANSWER 12 OF 13 MEDLINE on STN
AN 84285847 MEDLINE
DN PubMed ID: 6468604
TI In vitro inactivation of the neurotoxic action of beta-bungarotoxin by the marine natural product, manoalide.
AU de Freitas J C; Blankemeier L A; Jacobs R S
SO Experientia, (1984 Aug 15) 40 (8) 864-5.
Journal code: 0376547. ISSN: 0014-4754.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198409
ED Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19840928

L1 ANSWER 13 OF 13 MEDLINE on STN
AN 77044134 MEDLINE
DN PubMed ID: 185992
TI Extrajunctional acetylcholine receptors. Alterations in human and experimental neuromuscular diseases.
AU Ringel S P; Bender A N; Engel W K
SO Archives of neurology, (1976 Nov) 33 (11) 751-8.
Journal code: 0372436. ISSN: 0003-9942.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 197612
ED Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19761223

=>

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                                                      ENTRY     SESSION
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 NEWS  3  FEB 25   CA/CAPLUS - Russian Agency for Patents and Trademarks
                   (ROSPATENT) added to list of core patent offices covered
 NEWS  4  FEB 28   PATDPAFULL - New display fields provide for legal status
                   data from INPADOC
 NEWS  5  FEB 28   BABS - Current-awareness alerts (SDIs) available
 NEWS  6  FEB 28   MEDLINE/LMEDLINE reloaded
 NEWS  7  MAR 02   GBFULL: New full-text patent database on STN
 NEWS  8  MAR 03   REGISTRY/ZREGISTRY - Sequence annotations enhanced
 NEWS  9  MAR 03   MEDLINE file segment of TOXCENTER reloaded
 NEWS  10 MAR 22   KOREAPAT now updated monthly; patent information enhanced
 NEWS  11 MAR 22   Original IDE display format returns to REGISTRY/ZREGISTRY
 NEWS  12 MAR 22   PATDPASPC - New patent database available
 NEWS  13 MAR 22   REGISTRY/ZREGISTRY enhanced with experimental property tags
 NEWS  14 APR 04   EPFULL enhanced with additional patent information and new
                   fields
 NEWS  15 APR 04   EMBASE - Database reloaded and enhanced
 NEWS  16 APR 18   New CAS Information Use Policies available online
 NEWS  17 APR 25   Patent searching, including current-awareness alerts (SDIs),
                   based on application date in CA/CAplus and USPATFULL/USPAT2
                   may be affected by a change in filing date for U.S.
                   applications.
 NEWS  18 APR 28   Improved searching of U.S. Patent Classifications for
                   U.S. patent records in CA/CAplus

 NEWS EXPRESS  JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

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FILE 'HOME' ENTERED AT 16:13:38 ON 04 MAY 2005

=> file medline
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'MEDLINE' ENTERED AT 16:13:49 ON 04 MAY 2005

 FILE LAST UPDATED: 3 MAY 2005 (20050503/UP).  FILE COVERS 1950 TO DATE.

 On December 19, 2004, the 2005 MeSH terms were loaded.

 The MEDLINE reload for 2005 is now available.  For details enter HELP
 RLOAD at an arrow promt (=>).  See also:

    http://www.nlm.nih.gov/mesh/
    http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

 OLDMEDLINE now back to 1950.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2005 vocabulary.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s bungarotoxin(L)(DMXBA or anabaseine)
          3230 BUNGAROTOXIN
             6 DMXBA
            74 ANABASEINE
L1          17 BUNGAROTOXIN(L)(DMXBA OR ANABASEINE)

=> d 1-17 bib

L1   ANSWER 1 OF 17     MEDLINE on STN
AN   2003579418     MEDLINE
DN   PubMed ID: 14660001
TI   Functional role of nicotinic acetylcholine receptors in apoptosis in HL-60
     cell line.
CM   Erratum in: Eur J Pharmacol. 2004 Apr 26;491(1):85
AU   Gimonet Delphine; Grailhe Regis; Coninx Paul; Antonicelli Frank; Haye
     Bernard; Liautaud-Roger Francoise
CS   Institut Jean-Godinot, Secteur Prevention, BP 171, 1 Avenue du general
     Koenig, 51056 Reims Cedex, France.
SO   European journal of pharmacology, (2003 Dec 15) 482 (1-3) 25-9.
     Journal code: 1254354. ISSN: 0014-2999.
CY   Netherlands
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   200408
ED   Entered STN: 20031216
     Last Updated on STN: 20040817
     Entered Medline: 20040816

L1   ANSWER 2 OF 17     MEDLINE on STN
AN   2002625947     MEDLINE
DN   PubMed ID: 12383953
```

TI Activation and inhibition of native neuronal alpha-bungarotoxin-sensitive nicotinic ACh receptors.
AU Uteshev Vladimir V; Meyer Edwin M; Papke Roger L
CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Box 100267 JHMHSC, 1600 SW Archer Rd, University of Florida, Gainesville 32610-0267, FL, USA.
NC GM57481-01A2 (NIGMS)
NS32888-02 (NINDS)
SO Brain research, (2002 Sep 6) 948 (1-2) 33-46.
Journal code: 0045503. ISSN: 0006-8993.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200210
ED Entered STN: 20021018
Last Updated on STN: 20021031
Entered Medline: 20021030

L1 ANSWER 3 OF 17 MEDLINE on STN
AN 2001553518 MEDLINE
DN PubMed ID: 11600102
TI Intragastric DMXB-A, an alpha7 nicotinic agonist, improves deficient sensory inhibition in DBA/2 mice.
AU Simosky J K; Stevens K E; Kem W R; Freedman R
CS Department of Pharmacology, University of Colorado Health Sciences Center, Denver, Colorado 80262, USA.
NC MH44211 (NIMH)
MH58680 (NIMH)
SO Biological psychiatry, (2001 Oct 1) 50 (7) 493-500.
Journal code: 0213264. ISSN: 0006-3223.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200112
ED Entered STN: 20011016
Last Updated on STN: 20020122
Entered Medline: 20011204

L1 ANSWER 4 OF 17 MEDLINE on STN
AN 2001452253 MEDLINE
DN PubMed ID: 11498514
TI Differential effects of chronic drug treatment on alpha3* and alpha7 nicotinic receptor binding sites, in hippocampal neurones and SH-SY5Y cells.
AU Ridley D L; Rogers A; Wonnacott S
CS Department of Biology and Biochemistry, University of Bath, Bath, BA2 7AY.
SO British journal of pharmacology, (2001 Aug) 133 (8) 1286-95.
Journal code: 7502536. ISSN: 0007-1188.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200110
ED Entered STN: 20010813
Last Updated on STN: 20011029
Entered Medline: 20011025

L1 ANSWER 5 OF 17 MEDLINE on STN
AN 2001072857 MEDLINE
DN PubMed ID: 10942043
TI The brain alpha7 nicotinic receptor may be an important therapeutic target for the treatment of Alzheimer's disease: studies with DMXBA (GTS-21).
AU Kem W R

CS Department of Pharmacology and Experimental Therapeutics, University of Florida College of Medicine, Gainesville 32610-0267, USA.. kem@pharmacology.ufl.edu
SO Behavioural brain research, (2000 Aug) 113 (1-2) 169-81. Ref: 76
Journal code: 8004872. ISSN: 0166-4328.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 200101
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010103

L1 ANSWER 6 OF 17 MEDLINE on STN
AN 2001047937 MEDLINE
DN PubMed ID: 10986337
TI Inhibition of nitric oxide synthase prevents alpha 7 nicotinic receptor-mediated restoration of inhibitory auditory gating in rat hippocampus.
AU Adams C E; Stevens K E; Kem W R; Freedman R
CS Department of Psychiatry, University of Colorado Health Sciences Center, Denver, CO 80262, USA.. cathy.adams@uchsc.edu
NC 5P50 MH44212 (NIMH)
R29 MH51931 (NIMH)
SO Brain research, (2000 Sep 22) 877 (2) 235-44.
Journal code: 0045503. ISSN: 0006-8993.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200012
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001214

L1 ANSWER 7 OF 17 MEDLINE on STN
AN 2001017827 MEDLINE
DN PubMed ID: 11032889
TI Involvement of alpha7 nicotinic acetylcholine receptors in activation of tyrosine hydroxylase and dopamine beta-hydroxylase gene expression in PC12 cells.
AU Gueorguiev V D; Zeman R J; Meyer E M; Sabban E L
CS Department of Biochemistry and Molecular Biology, New York Medical College, Valhalla, New York 10595, USA.
NC NS28869 (NINDS)
SO Journal of neurochemistry, (2000 Nov) 75 (5) 1997-2005.
Journal code: 2985190R. ISSN: 0022-3042.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200011
ED Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001109

L1 ANSWER 8 OF 17 MEDLINE on STN
AN 1999081800 MEDLINE
DN PubMed ID: 9864273
TI Analysis of 3-(4-hydroxy, 2-Methoxybenzylidene)anabaseine selectivity and activity at human and rat alpha-7 nicotinic receptors.
AU Meyer E M; Kuryatov A; Gerzanich V; Lindstrom J; Papke R L

CS Department of Pharmacology and Therapeutics, University of Florida, Gainesville, Florida, USA.
NC NIA P01 10485 (NINDS)
NS32888
SO Journal of pharmacology and experimental therapeutics, (1998 Dec) 287 (3) 918-25.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199901
ED Entered STN: 19990209
Last Updated on STN: 19990209
Entered Medline: 19990127

L1 ANSWER 9 OF 17 MEDLINE on STN
AN 1998456786 MEDLINE
DN PubMed ID: 9783447
TI Alzheimer's drug design based upon an invertebrate toxin (anabaseine) which is a potent nicotinic receptor agonist.
AU Kem W R
CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville 32610-0267, USA.. Kem@pharmacology.ufl.edu
SO Invertebrate neuroscience : IN, (1997 Sep-Dec) 3 (2-3) 251-9. Ref: 39
Journal code: 9602489. ISSN: 1354-2516.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199811
ED Entered STN: 19990106
Last Updated on STN: 19990106
Entered Medline: 19981118

L1 ANSWER 10 OF 17 MEDLINE on STN
AN 1998312873 MEDLINE
DN PubMed ID: 9650859
TI Up-regulation of human alpha7 nicotinic receptors by chronic treatment with activator and antagonist ligands.
AU Molinari E J; Delbono O; Messi M L; Renganathan M; Arneric S P; Sullivan J P; Gopalakrishnan M
CS Neurological and Urological Diseases Research, Pharmaceutical Products Division, Abbott Laboratories, Abbott Park, IL 60064-3500, USA.
SO European journal of pharmacology, (1998 Apr 17) 347 (1) 131-9.
Journal code: 1254354. ISSN: 0014-2999.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199809
ED Entered STN: 19980910
Last Updated on STN: 19980910
Entered Medline: 19980901

L1 ANSWER 11 OF 17 MEDLINE on STN
AN 1998261203 MEDLINE
DN PubMed ID: 9600576
TI Selective alpha7-nicotinic agonists normalize inhibition of auditory response in DBA mice.
AU Stevens K E; Kem W R; Mahnir V M; Freedman R
CS Medical Research Service, Veterans Affairs Medical Center, Denver, CO 80262, USA.. stevensk@sembilan.uchsc.edu

NC R29 MH51931 (NIMH)
SO Psychopharmacology, (1998 Apr) 136 (4) 320-7.
Journal code: 7608025. ISSN: 0033-3158.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199808
ED Entered STN: 19980820
Last Updated on STN: 19980820
Entered Medline: 19980807

L1 ANSWER 12 OF 17 MEDLINE on STN
AN 1998173744 MEDLINE
DN PubMed ID: 9495863
TI Neuroprotective and memory-related actions of novel alpha-7 nicotinic agents with different mixed agonist/antagonist properties.
AU Meyer E M; Tay E T; Zoltewicz J A; Meyers C; King M A; Papke R L; De Fiebre C M
CS Department of Pharmacology and Therapeutics, University of Florida, Gainesville, USA.
NC AG P01 10481 (NIA)
AG00176 (NIA)
NS32888 (NINDS)
SO Journal of pharmacology and experimental therapeutics, (1998 Mar) 284 (3) 1026-32.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199804
ED Entered STN: 19980416
Last Updated on STN: 19980416
Entered Medline: 19980409

L1 ANSWER 13 OF 17 MEDLINE on STN
AN 1998064078 MEDLINE
DN PubMed ID: 9399967
TI **Anabaseine** is a potent agonist on muscle and neuronal alpha-**bungarotoxin**-sensitive nicotinic receptors.
AU Kem W R; Mahnir V M; Papke R L; Lingle C J
CS Department of Pharmacology and Therapeutics, College of Medicine, University of Florida, Gainesville, Florida, USA.
SO Journal of pharmacology and experimental therapeutics, (1997 Dec) 283 (3) 979-92.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199801
ED Entered STN: 19980129
Last Updated on STN: 19980129
Entered Medline: 19980115

L1 ANSWER 14 OF 17 MEDLINE on STN
AN 1998034233 MEDLINE
DN PubMed ID: 9369300
TI 3-[2,4-Dimethoxybenzylidene]anabaseine (DMXB) selectively activates rat alpha7 receptors and improves memory-related behaviors in a mecamylamine-sensitive manner.
AU Meyer E M; Tay E T; Papke R L; Meyers C; Huang G L; de Fiebre C M
CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville 32610, USA.

NC AG00176 (NIA)
PO1 10481
PO1 AG01425 (NIA)
SO Brain research, (1997 Sep 12) 768 (1-2) 49-56.
Journal code: 0045503. ISSN: 0006-8993.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980109
Last Updated on STN: 19980109
Entered Medline: 19971218

L1 ANSWER 15 OF 17 MEDLINE on STN
AN 97410009 MEDLINE
DN PubMed ID: 9266724
TI Nicotinic receptor stimulation protects neurons against beta-amyloid toxicity.
AU Kihara T; Shimohama S; Sawada H; Kimura J; Kume T; Kochiyama H; Maeda T; Akaike A
CS Department of Neurology, Faculty of Medicine, Kyoto University, Japan.
SO Annals of neurology, (1997 Aug) 42 (2) 159-63.
Journal code: 7707449. ISSN: 0364-5134.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199709
ED Entered STN: 19970922
Last Updated on STN: 19970922
Entered Medline: 19970905

L1 ANSWER 16 OF 17 MEDLINE on STN
AN 95139993 MEDLINE
DN PubMed ID: 7838125
TI Characterization of a series of **anabaseine**-derived compounds reveals that the 3-(4)-dimethylaminocinnamylidine derivative is a selective agonist at neuronal nicotinic alpha 7/125I-alpha-**bungarotoxin** receptor subtypes.
AU de Fiebre C M; Meyer E M; Henry J C; Muraskin S I; Kem W R; Papke R L
CS Department of Pharmacology and Therapeutics, University of Florida College of Medicine, Gainesville 32610-0267.
NC AG00196 (NIA)
AG07561 (NIA)
P01-AG10485 (NIA)
SO Molecular pharmacology, (1995 Jan) 47 (1) 164-71.
Journal code: 0035523. ISSN: 0026-895X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199502
ED Entered STN: 19950314
Last Updated on STN: 19950314
Entered Medline: 19950228

L1 ANSWER 17 OF 17 MEDLINE on STN
AN 94301514 MEDLINE
DN PubMed ID: 8028765
TI A novel nicotinic agonist facilitates induction of long-term potentiation in the rat hippocampus.
AU Hunter B E; de Fiebre C M; Papke R L; Kem W R; Meyer E M
CS Department of Neuroscience, University of Florida College of Medicine, Gainesville 32601.

```
NC   NIA P01 AG10485 (NIA)
     T32 AG00196 (NIA)
     T32AA07561 (NIAAA)
SO   Neuroscience letters, (1994 Feb 28) 168 (1-2) 130-4.
     Journal code: 7600130. ISSN: 0304-3940.
CY   Ireland
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199408
ED   Entered STN: 19940818
     Last Updated on STN: 19970203
     Entered Medline: 19940808


=> s l1 and (inflamm? or rheumatoid arthritis or RA)
        302840 INFLAMM?
         80268 RHEUMATOID
        109389 ARTHRITIS
         47480 RHEUMATOID ARTHRITIS
                 (RHEUMATOID(W)ARTHRITIS)
        435794 RA
L2           0 L1 AND (INFLAMM? OR RHEUMATOID ARTHRITIS OR RA)

=> s l1 and inflam
             4 INFLAM
L3           0 L1 AND INFLAM

=> s l1 and inflam?
        306638 INFLAM?
L4           0 L1 AND INFLAM?

=> s bungarotoxin and inflamm?
          3230 BUNGAROTOXIN
        302340 INFLAMM?
L5         24 BUNGAROTOXIN AND INFLAMM?

=> s l5 and (rheumatoid arthritis or RA)
         80268 RHEUMATOID
        109889 ARTHRITIS
         47480 RHEUMATOID ARTHRITIS
                 (RHEUMATOID(W)ARTHRITIS)
        435794 RA
L6           1 L5 AND (RHEUMATOID ARTHRITIS OR RA)

=> d 1 all

L6   ANSWER 1 OF 1     MEDLINE on STN
AN   2003033986     MEDLINE
DN   PubMed ID: 12508119
TI   Nicotinic acetylcholine receptor alpha7 subunit is an essential regulator
     of inflammation.
CM   Comment in: Nature. 2003 Jan 23;421(6921):328-9. PubMed ID: 12540886
     Comment in: Scand J Rheumatol. 2003;32(4):256. PubMed ID: 14626636
AU   Wang Hong; Yu Man; Ochani Mahendar; Amella Carol Ann; Tanovic Mahira;
     Susarla Seenu; Li Jian Hua; Wang Haichao; Yang Huan; Ulloa Luis; Al-Abed
     Yousef; Czura Christopher J; Tracey Kevin J
CS   Laboratory of Biomedical Science, North Shore Long Island Jewish Research
     Institute, 350 Community Drive, Manhasset, New York 11030, USA.
SO   Nature, (2003 Jan 23) 421 (6921) 384-8.  Electronic Publication:
     2002-12-22.
     Journal code: 0410462. ISSN: 0028-0836.
CY   England: United Kingdom
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
```

FS Priority Journals
EM 200303
ED Entered STN: 20030124
Last Updated on STN: 20030308
Entered Medline: 20030307
AB Excessive **inflammation** and tumour-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxaemia, sepsis, **rheumatoid arthritis** and **inflammatory** bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive **inflammation.** The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic **inflammatory** responses. This physiological mechanism, termed the 'cholinergic anti-**inflammatory** pathway' has major implications in immunology and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here we report that the nicotinic acetylcholine receptor alpha7 subunit is required for acetylcholine inhibition of macrophage TNF release. Electrical stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in alpha7-deficient mice. Thus, the nicotinic acetylcholine receptor alpha7 subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-**inflammatory** pathway.
CT Check Tags: Female; Male
Acetylcholine: PD, pharmacology
Aging: PH, physiology
Animals
Bungarotoxins: ME, metabolism
Cells, Cultured
Electric Stimulation
Endotoxemia: GE, genetics
Endotoxemia: ME, metabolism
Humans
Inflammation: GE, genetics
***Inflammation: ME, metabolism**
Macrophages, Peritoneal: DE, drug effects
*Macrophages, Peritoneal: ME, metabolism
Mice
Mice, Inbred C57BL
Mice, Knockout
Nicotine: PD, pharmacology
Protein Subunits: GE, genetics
Protein Subunits: ME, metabolism
RNA, Messenger: GE, genetics
RNA, Messenger: ME, metabolism
Receptors, Nicotinic: GE, genetics
*Receptors, Nicotinic: ME, metabolism
Research Support, U.S. Gov't, Non-P.H.S.
Research Support, U.S. Gov't, P.H.S.
*Tumor Necrosis Factor-alpha: ME, metabolism
Vagus Nerve: PH, physiology
RN 51-84-3 (Acetylcholine); 54-11-5 (Nicotine)
CN 0 (Bungarotoxins); 0 (Protein Subunits); 0 (RNA, Messenger); 0 (Receptors, Nicotinic); 0 (Tumor Necrosis Factor-alpha); 0 (alpha-**bungarotoxin** receptor)

=>

---Logging off of STN---

=>

Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	7.67	7.88

STN INTERNATIONAL LOGOFF AT 16:20:52 ON 04 MAY 2005

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=> d his ful

     FILE 'HCAPLUS' ENTERED AT 11:02:09 ON 11 MAY 2005
                  E TRACEY KEVIN J/AU
L1            159 SEA ABB=ON  ("TRACEY KEVIN"/AU OR "TRACEY KEVIN J"/AU)
                  E WANG HONG/AU
L2           1744 SEA ABB=ON  "WANG HONG"/AU
L3              9 SEA ABB=ON  L1 AND L2
                  SELECT RN L3 1-9

     FILE 'REGISTRY' ENTERED AT 11:04:07 ON 11 MAY 2005
L4             44 SEA ABB=ON  (54-11-5/BI OR 51-84-3/BI OR 11032-79-4/BI OR
                  152478-57-4/BI OR 154291-01-7/BI OR 156743-65-6/BI OR 156743-78
                  -1/BI OR 156743-79-2/BI OR 156743-85-0/BI OR 178419-47-1/BI OR
                  220099-94-5/BI OR 248270-35-1/BI OR 248270-40-8/BI OR 248270-41
                  -9/BI OR 37209-28-2/BI OR 373358-00-0/BI OR 400855-55-2/BI OR
                  400855-58-5/BI OR 400855-62-1/BI OR 50-36-2/BI OR 5937-29-1/BI
                  OR 708210-26-8/BI OR 708210-27-9/BI OR 708306-01-8/BI OR
                  709881-00-5/BI OR 709881-01-6/BI OR 709881-02-7/BI OR 709881-03
                  -8/BI OR 709881-04-9/BI OR 709881-05-0/BI OR 709881-06-1/BI OR
                  709881-07-2/BI OR 709881-08-3/BI OR 709881-09-4/BI OR 709881-10
                  -7/BI OR 709881-11-8/BI OR 709881-12-9/BI OR 709881-13-0/BI OR
                  709881-14-1/BI OR 709881-15-2/BI OR 709881-16-3/BI OR 709881-17
                  -4/BI OR 709881-18-5/BI OR 709881-19-6/BI)

     FILE 'HCAPLUS' ENTERED AT 11:04:15 ON 11 MAY 2005
L5              4 SEA ABB=ON  L3 AND L4
L6                ANALYZE L5 2 CT :     118 TERMS

     FILE 'REGISTRY' ENTERED AT 11:20:54 ON 11 MAY 2005
L7              2 SEA ABB=ON  (248270-40-8 OR 156743-65-6)/RN

     FILE 'HCAPLUS' ENTERED AT 11:21:44 ON 11 MAY 2005
L8              4 SEA ABB=ON  L7
L9              1 SEA ABB=ON  L8 AND ?RHEUM?(W)?ARTHRITIS?
L10             1 SEA ABB=ON  ?ANABASEINE? AND ?RHEUM?(W)?ARTHRITIS?
L11             1 SEA ABB=ON  L9 OR L10

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
     12:40:34 ON 11 MAY 2005
L12             1 SEA ABB=ON  L10
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There are the 2 requested compds

1 cit from CA Plus

1 cit from other databases, searching on "anabaseine" & R.A.

```
=> d que stat l11
L7             2 SEA FILE=REGISTRY ABB=ON  (248270-40-8 OR 156743-65-6)/RN
L8             4 SEA FILE=HCAPLUS ABB=ON  L7
L9             1 SEA FILE=HCAPLUS ABB=ON  L8 AND ?RHEUM?(W)?ARTHRITIS?
L10            1 SEA FILE=HCAPLUS ABB=ON  ?ANABASEINE? AND ?RHEUM?(W)?ARTHRITIS?
L11            1 SEA FILE=HCAPLUS ABB=ON  L9 OR L10

=> d ibib abs hitstr l11 1-1

L11  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         2004:513538  HCAPLUS
DOCUMENT NUMBER:          141:65099
TITLE:                    Inhibition of inflammation using α7 nicotinic
                          receptor-binding cholinergic agonists
INVENTOR(S):              Tracey, Kevin J.; Wang, Hong
PATENT ASSIGNEE(S):       North Shore-Long Island Jewish Research Institute, USA
SOURCE:                   PCT Int. Appl., 75 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.          DATE
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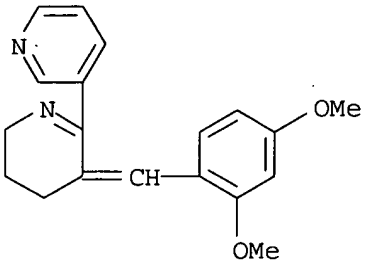
     WO 2004052365         A2    20040624    WO 2003-US38708          20031205
     WO 2004052365         A3    20040923
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO,
             NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
             TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
             BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
             ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     US 2004204355         A1    20041014    US 2003-729427           20031205
PRIORITY APPLN. INFO.:                       US 2002-431650P      P   20021206
OTHER SOURCE(S):          MARPAT 141:65099
AB   Methods of inhibiting release of a proinflammatory cytokine from a
     macrophage are provided. The methods comprise treating the macrophage
     with a cholinergic agonist in an amount sufficient to decrease the amount of
     the proinflammatory cytokine that is released from the macrophage, wherein
     the cholinergic agonist is selective for an α7 nicotinic receptor.
     Methods for inhibiting an inflammatory cytokine cascade in a patient are
     also provided. The methods comprise treating the patient with a
     cholinergic agonist in an amount sufficient to inhibit the inflammatory
     cytokine cascade, wherein the cholinergic agonist is selective for an
     α7 nicotinic receptor. Methods for determining whether a compound is a
     cholinergic agonist reactive with an α7 nicotinic receptor are also
     provided. The methods comprise determining whether the compound inhibits
release
     of a proinflammatory cytokine from a mammalian cell. Addnl., methods for
     determining whether a compound is a cholinergic antagonist reactive with an
     α7 nicotinic receptor are provided. These methods comprise determining
     whether the compound reduces the ability of a cholinergic agonist to inhibit
     the release of a proinflammatory cytokine from a mammalian cell.
     Oligonucleotides or mimetics capable of inhibiting attenuation of
```

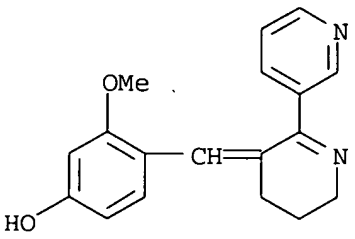
lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an α7 receptor. Addnl., methods of inhibiting attenuation of TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)**anabaseine.**

IT **156743-65-6 248270-40-8**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(as cholinergic agonist of α7 nicotinic receptor; inflammation inhibition with α7 nicotinic receptor-binding cholinergic agonists)

RN 156743-65-6 HCAPLUS
CN 2,3'-Bipyridine, 3-[(2,4-dimethoxyphenyl)methylene]-3,4,5,6-tetrahydro- (9CI) (CA INDEX NAME)



RN 248270-40-8 HCAPLUS
CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-3-methoxy- (9CI) (CA INDEX NAME)



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=> d que stat l12
L10           1 SEA FILE=HCAPLUS ABB=ON  ?ANABASEINE? AND ?RHEUM?(W)?ARTHRITIS?
L12           1 SEA L10

=> d l12 ibib abs 1-1

L12  ANSWER 1 OF 1  WPIDS  COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER:     2004-468700 [44]   WPIDS
DOC. NO. CPI:         C2004-175666
TITLE:                Treatment of a condition e.g. allergy mediated by release
                      of proinflammatory cytokine involves treating a patient
                      with a cholinergic agonist selective for an alpha-7
                      nicotinic receptor to decrease the released amount of the
                      cytokine.
DERWENT CLASS:        B02 B03 B04 D16
INVENTOR(S):          TRACEY, K J; WANG, H
PATENT ASSIGNEE(S):   (NSHO-N) NORTH SHORE-LONG ISLAND JEWISH RES
COUNTRY COUNT:        107
PATENT INFORMATION:

     PATENT NO        KIND DATE     WEEK      LA   PG
     ---------------------------------------------
     WO 2004052365    A2 20040624 (200444)* EN   75
        RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE
            LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE
            DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG
            KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM
            PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US
            UZ VC VN YU ZA ZM ZW
     US 2004204355    A1 20041014 (200468)
     AU 2003298939    A1 20040630 (200472)

APPLICATION DETAILS:

     PATENT NO      KIND                  APPLICATION          DATE
     ------------------------------------------------------------------
     WO 2004052365  A2                    WO 2003-US38708      20031205
     US 2004204355  A1 Provisional        US 2002-431650P      20021206
                                          US 2003-729427       20031205
     AU 2003298939  A1                    AU 2003-298939       20031205

FILING DETAILS:

     PATENT NO       KIND                   PATENT NO
     ------------------------------------------------
     AU 2003298939   A1 Based on            WO 2004052365

PRIORITY APPLN. INFO: US 2002-431650P      20021206; US
                      2003-729427       20031205
AN   2004-468700 [44]   WPIDS
AB   WO2004052365 A UPAB: 20040712
     NOVELTY - Treatment of a patient suffering from a condition mediated by
     release of proinflammatory cytokine e.g. appendicitis involves treating a
     patient with a cholinergic agonist (a1) selective for an alpha -7
     nicotinic receptor to decrease the amount of the proinflammatory cytokine
     which is released from a macrophage.
          DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:
          (1) determining (M1) whether a compound is a cholinergic agonist
```

selective for an alpha -7 nicotinic receptor involving:

(i) determining whether the compound inhibits release of a proinflammatory cytokine from a mammalian cell (e.g. immune cell or macrophage); and

(ii) determining whether the compound is (a1) reactive with at least one nicotinic receptor that is not alpha -7 (where the compound that inhibits the release of the proinflammatory cytokine from the mammalian cell, but is not (a1) reactive with at least one nicotinic receptor that is not alpha -7, is a cholinergic agonist selective for alpha -7 nicotinic receptor);

(2) determining (M2) whether a compound is a cholinergic antagonist reactive with an alpha -7 nicotinic receptor involving determining whether the compound reduces the ability of (a1) to inhibit the release of a proinflammatory cytokine from a mammalian cell (e.g. immune cell or macrophage) (where the compound that reduces the ability of a (a1) to inhibit the release of the proinflammatory cytokine from the mammalian cell is a cholinergic antagonist reactive with alpha -7 receptor);

(3) determining (M3) whether a test compound has the ability to inhibit inflammation involving either determining whether the test compound is a cholinergic agonist reactive with alpha -7 nicotinic receptor (preferably on a macrophage) or determining whether the test compound inhibits binding of an antagonist (preferably bungarotoxin) to alpha -7 nicotinic receptor;

(4) an oligonucleotide or mimetic (containing a sequence greater than 5 nucleotides long that is complementary to an mRNA of an alpha -7 receptor) capable of inhibiting attenuation of lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to (a1); and

(5) inhibiting attenuation of TNF release from a mammalian (e.g. mammal such as human) macrophage upon exposure of the macrophage to (a1) involving treating the macrophage with the oligonucleotide or mimetic.

ACTIVITY - Antiinflammatory; Gastrointestinal-Gen.; Antiulcer; Hepatotropic; Virucide; Antiasthmatic; Antiallergic; Antibacterial; Immunosuppressive; Vasotropic; Vulnerary; Antipyretic; Immunomodulator; Gynecological; Respiratory-Gen.; CNS-Gen.; Anti-HIV; Fungicide; Antimalarial; Antianginal; Cardiant; Antiarteriosclerotic; Thrombolytic; Antirheumatic; Neuroprotective; Analgesic; Muscular-Gen.; Antiarthritic; Ophthalmological; Cytostatic; Osteopathic; Antigout; Antithyroid; Dermatological; Nephrotropic; Uropathic; Nootropic; Antidiabetic; Antipsoriatic.

Mice (cecal ligation and puncture murine) treated with 3-2,4-dimethoxybenzylidene **anabaseine** (test compound) (4 mg/kg) or vehicle control for treating sepsis. The test compound and the control were administered intraperitoneally twice a day on day 1 and day 2 (24 and 48 hours post-surgery respectively) and were administered once on day 3. Mortality was monitored daily for 14 days after surgery. The test compound/control showed % of survival of mice was found to be 91/30% after 14 days. Thus the test compound significantly improved survival in the model of sepsis.

MECHANISM OF ACTION - Proinflammatory cytokine release inhibitor; Cholinergic agonist; TNF release inhibitor.

Effect of (-)-Spiro-1-azabicylco(2.2.2)octane-3,5'-oxazolidin-2'-one (test compound) in inhibiting release of TNF- alpha using LPS-stimulated murine RAW 264.7 macrophage-like cells was as follows: Murine RAW 264.7 macrophage-like cells were treated with (-)-spiro-1-azabicylco(2.2.2)octane-3,5'-oxazolidin-2'-one (test compound) at 0, 0.001, 0.1, 1, 10 and 100 mu M. Five minutes after the addition of the test compound, the cells were treated with LPS (500 ng/ml). TNF- alpha was measured by ELISA method. The TNF- alpha release (ng/ml) was 2, approx. 2,

1.5, approx. 1.6, approx. 1.8 and approx. 0.4 at 0, 0.01, 0.1, 1, 10 and 100 nM respectively. The results demonstrate that the higher concentration of the test compound inhibit TNF- alpha release from the cells. TNF- alpha release was decreased by more than four times in cells treated with 100 mu M test compound compared to the control cells.

USE - For the treatment of appendicitis, peptic, gastric, and duodenal ulcers, peritonitis, pancreatitis, epiglottitis, achalasia, cholangitis, cholecystitis, hepatitis, Whipple's disease, asthma, allergy, anaphylactic shock, immune complex disease, organ ischemia, reperfusion injury, organ necrosis, hay fever, sepsis, septicemia, endotoxic shock, cachexia, hyperpyrexia, esosinophilic granuloma, granulomatosis, sarcoidosis, septic abortion, epididymitis, vaginitis, prostatitis, urethritis, bronchitis, emphysema, rhinitis, cystic fibrosis, pneumonitis, pneumoultramicroscopic silicovolcanoconisosis, alvealitis, bronchiolitis, pharyngitis, pleurisy, sinusitis, influenza, respiratory syncytial virus infection, herpes infection, HIV infection, hepatitis B virus infection, hepatitis C virus infection, disseminated bacteremia, Dengue fever, candidiasis, malaria, filariasis, amebiasis, hydatid cysts, burns, vasulitis, angiitis, endocarditis, arteritis, atherosclerosis, thrombophlebitis, pericarditis, myocarditis, myocardial ischemia, periarteritis nodosa, rheumatic fever, celiac disease, congestive heart failure, adult respiratory distress syndrome, chronic obstructive pulmonary disease, meningitis, encephalitis, neuritis, neuralgia, spinal cord injury, paralysis, uveitis, arthritides, arthralgias, osteomyelitis, faciitis, Paget's disease, gout, periodontal disease, **rheumatoid arthritis**, synovitis, myasthenia gravis, thryoiditis, systemic lupus erythematosus, Goodpasture's syndrome, Behcets's syndrome, allograft rejection, graft-versus-host disease, ankylosing spondylitis, Berger's disease, ankylosing spondylitis, Retier's syndrome, Hodgkins disease, cerebral infarction or cerebral embolism) mediated by release of a proinflammatory cytokine (e.g. tumor necrosis factor (TNF), interleukin (IL)-1 beta , IL-6, IL-18 and high mobility group protein 1 (HMG-1)); for determining whether a compound is (a1) selective for alpha -7 nicotinic receptor; for determining whether a compound is a cholinergic antagonist reactive with an alpha -7 nicotinic receptor (all claimed). Also useful for the treatment of acute or ischemic colitis, diverticulitis, Crohn's disease, dermatomyositis, sunburn, urticaria, warts, wheals, Alzheimer's disease, multiple sclerosis, Guillame Barre syndrome, type II diabetes, psoriasis; gastrointestinal disorder (including gastric ulcer).

ADVANTAGE - The method reduces the inflammation. (a1) provides fewer side effects than currently identified agonists that are relatively non-specific.

Dwg.0/11

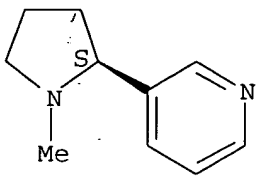
=> d ibib abs hitstr l5 1-4

L5 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:907341 HCAPLUS
DOCUMENT NUMBER: 141:374660
TITLE: Cholinergic agonists inhibit HMGB1 release and improve survival in experimental sepsis
AUTHOR(S): **Wang, Hong**; Liao, Hong; Ochani, Mahendar; Justiniani, Marilou; Lin, Xinchun; Yang, Lihong; Al-Abed, Yousef; Wang, Haichao; Metz, Christine; Miller, Edmund J.; **Tracey, Kevin J.**; Ulloa, Luis
CORPORATE SOURCE: The Center for Immunology and Inflammation, North Shore-LIJ Research Institute, North Shore University Hospital, Manhasset, NY, 11030, USA
SOURCE: Nature Medicine (New York, NY, United States) (2004), 10(11), 1216-1221
CODEN: NAMEFI; ISSN: 1078-8956
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Physiol. anti-inflammatory mechanisms can potentially be exploited for the treatment of inflammatory disorders. Here we report that the neurotransmitter acetylcholine inhibits HMGB1 release from human macrophages by signaling through a nicotinic acetylcholine receptor. Nicotine, a selective cholinergic agonist, is more efficient than acetylcholine and inhibits HMGB1 release induced by either endotoxin or tumor necrosis factor-alpha (TNF-α). Nicotinic stimulation prevents activation of the NF-κB pathway and inhibits HMGB1 secretion through a specific 'nicotinic anti-inflammatory pathway' that requires the α7 nicotinic acetylcholine receptor (α7nAChR). In vivo, treatment with nicotine attenuates serum HMGB1 levels and improves survival in exptl. models of sepsis, even when treatment is started after the onset of the disease. These results reveal acetylcholine as the first known physiol. inhibitor of HMGB1 release from human macrophages and suggest that selective nicotinic agonists for the α7nAChR might have therapeutic potential for the treatment of sepsis.

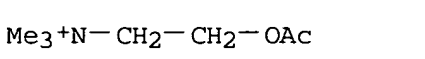
IT **54-11-5**, Nicotine
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in exptl. sepsis)
RN 54-11-5 HCAPLUS
CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT **51-84-3**, Acetylcholine, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholinergic agonists inhibit HMGB1 release and improve survival in

exptl. sepsis)
RN 51-84-3 HCAPLUS
CN Ethanaminium, 2-(acetyloxy)-N,N,N-trimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:513538 HCAPLUS
DOCUMENT NUMBER: 141:65099
TITLE: Inhibition of inflammation using α7 nicotinic receptor-binding cholinergic agonists
INVENTOR(S): **Tracey, Kevin J.; Wang, Hong**
PATENT ASSIGNEE(S): North Shore-Long Island Jewish Research Institute, USA
SOURCE: PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004052365	A2	20040624	WO 2003-US38708	20031205
WO 2004052365	A3	20040923		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004204355	A1	20041014	US 2003-729427	20031205
PRIORITY APPLN. INFO.:			US 2002-431650P P	20021206

OTHER SOURCE(S): MARPAT 141:65099

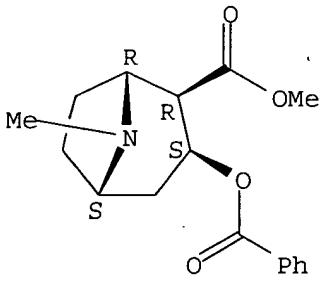
AB Methods of inhibiting release of a proinflammatory cytokine from a macrophage are provided. The methods comprise treating the macrophage with a cholinergic agonist in an amount sufficient to decrease the amount of the proinflammatory cytokine that is released from the macrophage, wherein the cholinergic agonist is selective for an α7 nicotinic receptor. Methods for inhibiting an inflammatory cytokine cascade in a patient are also provided. The methods comprise treating the patient with a cholinergic agonist in an amount sufficient to inhibit the inflammatory cytokine cascade, wherein the cholinergic agonist is selective for an α7 nicotinic receptor. Methods for determining whether a compound is a cholinergic agonist reactive with an α7 nicotinic receptor are also provided. The methods comprise determining whether the compound inhibits release of a proinflammatory cytokine from a mammalian cell. Addnl., methods for determining whether a compound is a cholinergic antagonist reactive with an α7 nicotinic receptor are provided. These methods comprise determining whether the compound reduces the ability of a cholinergic agonist to inhibit

the release of a proinflammatory cytokine from a mammalian cell. Oligonucleotides or mimetics capable of inhibiting attenuation of lipopolysaccharide-induced TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are also provided. The oligonucleotides or mimetics consist essentially of a sequence greater than 5 nucleotides long that is complementary to an mRNA of an α7 receptor. Addnl., methods of inhibiting attenuation of TNF release from a mammalian macrophage upon exposure of the macrophage to a cholinergic agonist are provided. These methods comprise treating the macrophage with the above-described oligonucleotide or mimetic. Sepsis in mice was treated with 3-(2,4-dimethoxybenzylidene)anabaseine.

IT **50-36-2D**, Cocaine, quaternary analogs **5937-29-1**, Cocaine methiodide **154291-01-7D**, isomers **156743-65-6** **156743-78-1** **156743-79-2** **156743-85-0** **178419-47-1** **220099-94-5** **248270-35-1D**, isomers **248270-40-8** **248270-41-9** **373358-00-0** **400855-55-2** **400855-58-5** **400855-62-1** **708210-26-8D**, isomers **708210-27-9**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(as cholinergic agonist of α7 nicotinic receptor; inflammation inhibition with α7 nicotinic receptor-binding cholinergic agonists)

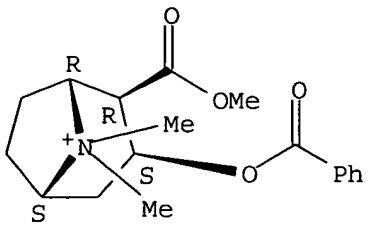
RN 50-36-2 HCAPLUS
CN 8-Azabicyclo[3.2.1]octane-2-carboxylic acid, 3-(benzoyloxy)-8-methyl-, methyl ester, (1R,2R,3S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



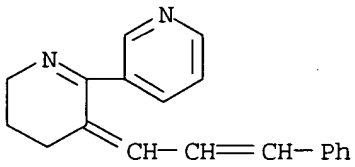
RN 5937-29-1 HCAPLUS
CN 8-Azoniabicyclo[3.2.1]octane, 3-(benzoyloxy)-2-(methoxycarbonyl)-8,8-dimethyl-, iodide, (1R,2R,3S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

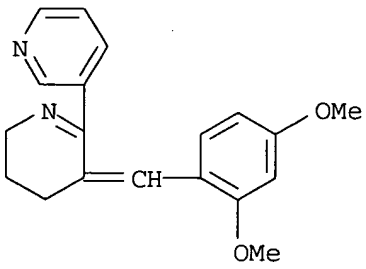


● I -

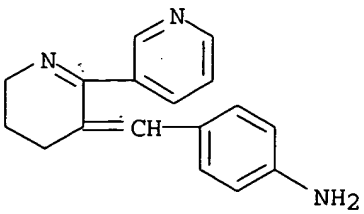
RN 154291-01-7 HCAPLUS
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-(3-phenyl-2-propenylidene)- (9CI) (CA INDEX NAME)



RN 156743-65-6 HCAPLUS
CN 2,3'-Bipyridine, 3-[(2,4-dimethoxyphenyl)methylene]-3,4,5,6-tetrahydro- (9CI) (CA INDEX NAME)

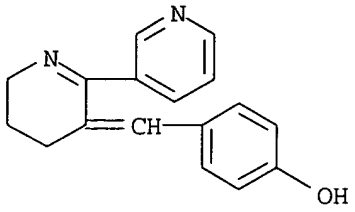


RN 156743-78-1 HCAPLUS
CN Benzenamine, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]- (9CI) (CA INDEX NAME)

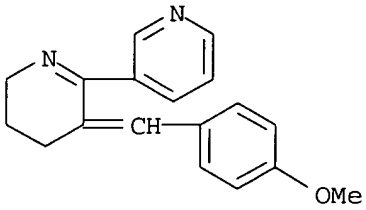


RN 156743-79-2 HCAPLUS

CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]- (9CI) (CA INDEX NAME)

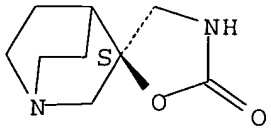


RN 156743-85-0 HCAPLUS
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[(4-methoxyphenyl)methylene]- (9CI) (CA INDEX NAME)

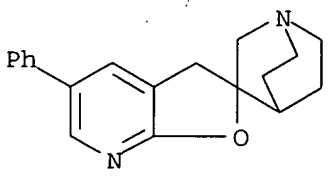


RN 178419-47-1 HCAPLUS
CN Spiro[1-azabicyclo[2.2.2]octane-3,5'-oxazolidin]-2'-one, (3S)- (9CI) (CA INDEX NAME)

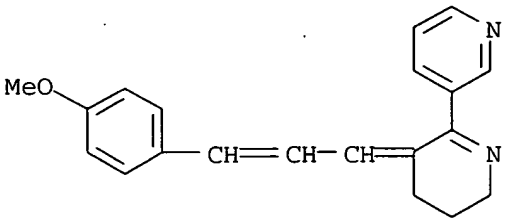
Absolute stereochemistry. Rotation (-).



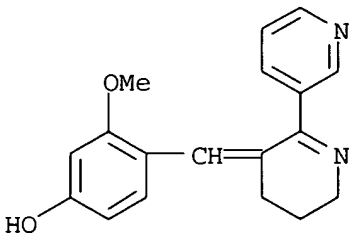
RN 220099-94-5 HCAPLUS
CN Spiro[1-azabicyclo[2.2.2]octane-3,2'(3'H)-furo[2,3-b]pyridine], 5'-phenyl- (9CI) (CA INDEX NAME)



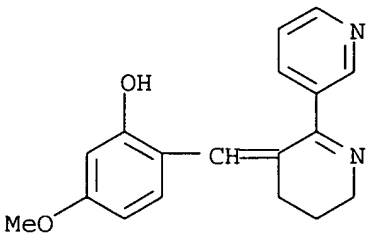
RN 248270-35-1 HCAPLUS
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[3-(4-methoxyphenyl)-2-propenylidene]- (9CI) (CA INDEX NAME)



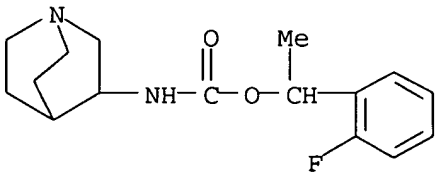
RN 248270-40-8 HCAPLUS
CN Phenol, 4-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-3-methoxy- (9CI) (CA INDEX NAME)



RN 248270-41-9 HCAPLUS
CN Phenol, 2-[(5,6-dihydro[2,3'-bipyridin]-3(4H)-ylidene)methyl]-5-methoxy- (9CI) (CA INDEX NAME)

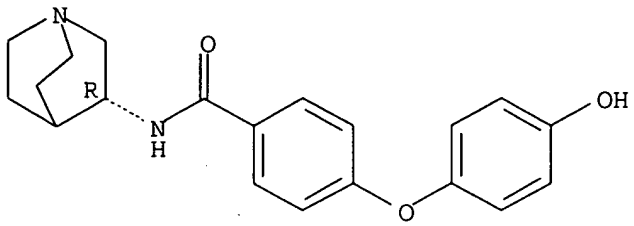


RN 373358-00-0 HCAPLUS
CN Carbamic acid, 1-azabicyclo[2.2.2]oct-3-yl-, 1-(2-fluorophenyl)ethyl ester (9CI) (CA INDEX NAME)



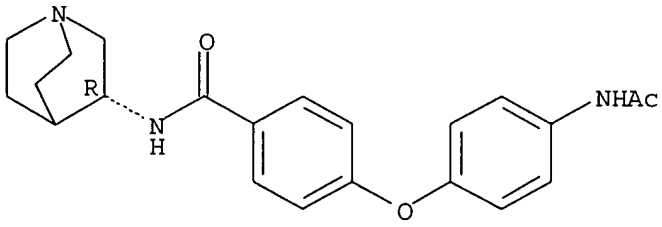
RN 400855-55-2 HCAPLUS
CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-(4-hydroxyphenoxy)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



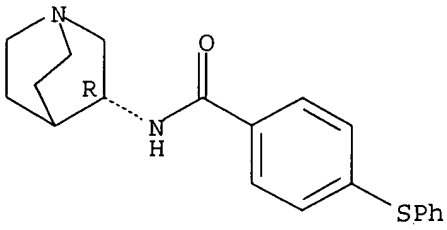
RN 400855-58-5 HCAPLUS
CN Benzamide, 4-[4-(acetylamino)phenoxy]-N-(3R)-1-azabicyclo[2.2.2]oct-3-yl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

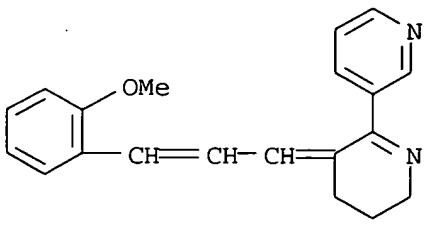


RN 400855-62-1 HCAPLUS
CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-(phenylthio)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



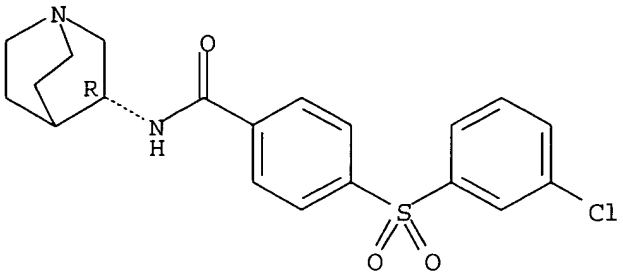
RN 708210-26-8 HCAPLUS
CN 2,3'-Bipyridine, 3,4,5,6-tetrahydro-3-[3-(2-methoxyphenyl)-2-propenylidene]- (9CI) (CA INDEX NAME)



RN 708210-27-9 HCAPLUS

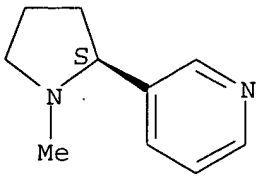
CN Benzamide, N-(3R)-1-azabicyclo[2.2.2]oct-3-yl-4-[(3-chlorophenyl)sulfonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **54-11-5**, Nicotine
RL: BSU (Biological study, unclassified); BIOL (Biological study) (inflammation inhibition with α7 nicotinic receptor-binding cholinergic agonists)
RN 54-11-5 HCAPLUS
CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT **708306-01-8**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nucleotide sequence, inhibiting attenuation of LPS-induced TNF release from macrophage exposed to cholinergic agonist; inflammation inhibition with α7 nicotinic receptor-binding cholinergic agonists)
RN 708306-01-8 HCAPLUS
CN DNA, d(G-C-A-G-C-G-C-A-T-G-T-T-G-A-G-T-C-C-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **709881-00-5 709881-01-6 709881-02-7**
709881-03-8 709881-04-9 709881-05-0
709881-06-1 709881-07-2 709881-08-3
709881-09-4 709881-10-7 709881-11-8
709881-12-9 709881-13-0 709881-14-1
709881-15-2 709881-16-3 709881-17-4
709881-18-5 709881-19-6
RL: PRP (Properties)
(unclaimed sequence; inhibition of inflammation using α7 nicotinic receptor-binding cholinergic agonists)
RN 709881-00-5 HCAPLUS
CN DNA, d(C-C-A-G-A-C-C-T-G-A-G-C-A-A-C-T-T-C-A-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-01-6 HCAPLUS

CN DNA, d(A-A-T-G-A-G-T-C-G-A-C-C-T-G-C-A-A-A-C-A-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-02-7 HCAPLUS
CN DNA, d(G-A-C-T-G-T-T-C-G-T-T-T-C-C-C-A-G-A-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-03-8 HCAPLUS
CN DNA, d(A-C-G-A-A-G-T-T-G-G-G-A-G-C-C-G-A-C-A-T-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-04-9 HCAPLUS
CN DNA, d(C-G-A-G-A-T-C-A-G-T-A-C-G-A-T-G-G-C-C-T-A-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-05-0 HCAPLUS
CN DNA, d(T-C-T-G-T-G-A-C-T-A-A-T-C-C-G-C-T-C-T-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-06-1 HCAPLUS
CN DNA, d(A-T-C-A-C-C-T-A-C-C-A-C-T-T-C-G-T-C-A-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-07-2 HCAPLUS
CN DNA, d(G-T-A-T-G-T-G-G-T-C-C-A-T-C-A-C-C-A-T-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-08-3 HCAPLUS
CN DNA, d(C-C-C-G-G-C-A-A-G-A-G-G-A-G-T-G-A-A-A-G-G-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-09-4 HCAPLUS
CN DNA, d(T-G-C-A-G-A-T-G-A-T-G-G-T-G-A-A-G-A-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-10-7 HCAPLUS
CN DNA, d(A-G-A-G-C-C-T-G-T-G-A-A-C-A-C-C-A-A-T-G-T-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-11-8 HCAPLUS
CN DNA, d(A-T-G-A-C-T-T-T-C-G-C-C-A-C-C-T-T-C-T-T-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-12-9 HCAPLUS
CN DNA, d(A-G-G-T-G-C-C-T-C-T-G-T-G-G-C-C-G-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-13-0 HCAPLUS
CN DNA, d(G-A-C-T-A-C-T-C-A-G-T-G-G-C-C-C-T-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-14-1 HCAPLUS
CN DNA, d(C-G-A-C-A-C-G-G-A-G-A-C-G-T-G-G-A-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-15-2 HCAPLUS
CN DNA, d(G-G-T-A-C-G-G-A-T-G-T-G-C-C-A-A-G-G-A-G-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-16-3 HCAPLUS
CN DNA, d(C-A-A-G-G-A-T-C-C-G-G-A-C-T-C-A-A-C-A-T-G-C-G-C-T-G-C-T-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-17-4 HCAPLUS
CN DNA, d(C-G-G-C-T-C-G-A-G-T-C-A-C-C-A-G-T-G-T-G-G-T-T-A-C-G-C-A-A-A-G-T-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-18-5 HCAPLUS
CN DNA, d(G-G-G-C-T-C-C-A-T-G-G-G-C-T-A-C-C-G-G-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 709881-19-6 HCAPLUS
CN DNA, d(C-C-C-C-A-T-G-G-C-C-C-T-G-G-C-A-C-T-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **11032-79-4**, α-Bungarotoxin **37209-28-2**, Bungarotoxin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α7 nicotinic receptor antagonist; inflammation inhibition with α7 nicotinic receptor-binding cholinergic agonists)
RN 11032-79-4 HCAPLUS
CN α-Bungarotoxin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 37209-28-2 HCAPLUS
CN Bungarotoxin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L5 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:216688 HCAPLUS
DOCUMENT NUMBER: 138:336197
TITLE: IFN-γ Induces High Mobility Group Box 1 Protein Release Partly Through a TNF-Dependent Mechanism
AUTHOR(S): Rendon-Mitchell, Beatriz; Ochani, Mahendar; Li, Jianhua; Han, Jialian; **Wang, Hong**; Yang, Huan; Susarla, Seenu; Czura, Christopher; Mitchell, Robert A.; Chen, Guoqian; Sama, Andrew E.; **Tracey, Kevin J.**; Wang, Haichao
CORPORATE SOURCE: Center of Immunology and Inflammation, North Shore-Long Island Jewish Research Institute, Manhasset, NY, 11030, USA
SOURCE: Journal of Immunology (2003), 170(7), 3890-3897
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We recently discovered that a ubiquitous protein, high mobility group box 1 protein (HMGB1), is released by activated macrophages, and functions as a late mediator of lethal systemic inflammation. To elucidate mechanisms underlying the regulation of HMGB1 release, we examined the roles of other cytokines in induction of HMGB1 release in macrophage cell cultures. Macrophage migration inhibitory factor, macrophage-inflammatory protein 1β, and IL-6 each failed to significantly induce the release of HMGB1 even at supraphysiol. levels (up to 200 ng/mL). IFN-γ, an

immunoregulatory cytokine known to mediate the innate immune response, dose-dependently induced the release of HMGB1, TNF, and NO, but not other cytokines such as IL-1α, IL-1β, or IL-6. Pharmacol. suppression of TNF activity with neutralizing Abs, or genetic disruption of TNF expression (TNF knockout) partially (50-60%) inhibited IFN-γ-mediated HMGB1 release. AG490, a specific inhibitor for Janus kinase 2 of the IFN-γ signaling pathway, dose-dependently attenuated IFN-γ-induced HMGB1 release. These data suggest that IFN-γ plays an important role in the regulation of HMGB1 release through a TNF- and Janus kinase 2-dependent mechanism.

IT **152478-57-4**, Janus kinase 2
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IFN-γ induces high mobility group box 1 protein release partly through a TNF-dependent mechanism and)

RN 152478-57-4 HCAPLUS
CN Kinase (phosphorylating), JAK2 protein (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:54246 HCAPLUS
DOCUMENT NUMBER: 138:186295
TITLE: Nicotinic acetylcholine receptor α7 subunit is an essential regulator of inflammation
AUTHOR(S): **Wang, Hong**; Yu, Man; Ochani, Mahendar; Amella, Carol Ann; Tanovic, Mahira; Susarla, Seenu; Li, Jian Hua; Wang, Haichao; Yang, Huan; Ulloa, Luis; Al-Abed, Yousef; Czura, Christopher J.; **Tracey, Kevin J.**
CORPORATE SOURCE: Laboratory of Biomedical Science, North Shore Long Island Jewish Research Institute, Manhasset, NY, 11030, USA
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CODEN: NATUAS; ISSN: 0028-0836
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Excessive inflammation and tumor-necrosis factor (TNF) synthesis cause morbidity and mortality in diverse human diseases including endotoxemia, sepsis, rheumatoid arthritis and inflammatory bowel disease. Highly conserved, endogenous mechanisms normally regulate the magnitude of innate immune responses and prevent excessive inflammation. The nervous system, through the vagus nerve, can inhibit significantly and rapidly the release of macrophage TNF, and attenuate systemic inflammatory responses. This physiol. mechanism, termed the cholinergic anti-inflammatory pathway' has major implications in immunol. and in therapeutics; however, the identity of the essential macrophage acetylcholine-mediated (cholinergic) receptor that responds to vagus nerve signals was previously unknown. Here the authors report that the nicotinic acetylcholine receptor α7 subunit is required for acetylcholine inhibition of macrophage TNF release. Elec. stimulation of the vagus nerve inhibits TNF synthesis in wild-type mice, but fails to inhibit TNF synthesis in α7-deficient mice. Thus, the nicotinic acetylcholine receptor α7 subunit is essential for inhibiting cytokine synthesis by the cholinergic anti-inflammatory pathway.

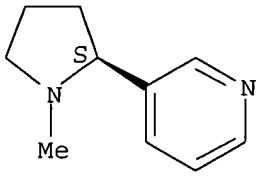
IT **51-84-3**, Acetylcholine, biological studies **54-11-5**,

Nicotine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nicotinic acetylcholine receptor α7 subunit is an essential regulator of inflammation)
RN 51-84-3 HCAPLUS
CN Ethanaminium, 2-(acetyloxy)-N,N,N-trimethyl- (9CI) (CA INDEX NAME)

$Me_3{}^+N-CH_2-CH_2-OAc$

RN 54-11-5 HCAPLUS
CN Pyridine, 3-[(2S)-1-methyl-2-pyrrolidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	60	alpha near "7" near3 nicotinic near3 receptor	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:47
S2	24	alpha near "7" near3 nicotinic near3 receptor and inflam$	US-PGPUB; USPAT; EPO	OR	ON	2005/04/06 17:13
S3	1995	(method same determining same whether same compound).clm.	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:48
S4	23	(method same determining same whether same compound).clm. and selective.clm. and receptor.clm.	US-PGPUB; USPAT; EPO	OR	ON	2005/04/18 11:49
S5	2	"5998429".pn. "6054434".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:13
S6	4	"6369224".pn. "6407095".pn. "6432975".pn. "6441049".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S7	2	"6479172".pn. "6479510".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S8	1	"6486172".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:14
S9	6	"6492386".pn. "6500840".pn. "6538003".pn. "6562816".pn. "6569865".pn. "6599916".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:03
S10	13	"6492386".pn. "6500840".pn. "6538003".pn. "6562816".pn. "6569865".pn. "6599916".pn. "6486172".pn. "6479510".pn. "6479172".pn. "6441049".pn. "6432975".pn. "6407095".pn. "6369224".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 12:33
S11	16	wishka.in.	US-PGPUB	OR	ON	2005/05/04 12:34
S12	241	oneill.in.	US-PGPUB	OR	ON	2005/05/04 12:45
S13	1620	walker.in.	US-PGPUB	OR	ON	2005/05/04 12:35
S14	37	walker.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:44
S15	1	loch.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:37
S16	190	peters.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 12:44
S17	20	oneill.in. and nicotinic	US-PGPUB	OR	ON	2005/05/04 13:00
S18	3	"6635645".pn. "6552012".pn. "6492385".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:33

S19	1	wo-9910338-$.did.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:43
S20	11	tracey.in. and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:48
S21	1	rheumatoid near2 arthritis and anabaseine and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:50
S22	0	("2004/0204355").URPN.	USPAT	OR	ON	2005/05/04 13:50
S23	23	rheumatoid near2 arthritis same nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 13:59
S24	5	rheumatoid near2 arthritis same nicotinic same alpha	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:02
S25	822	rheumatoid near2 arthritis same nicotinic ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:02
S26	800	rheumatoid near2 arthritis same nicotinic near S7 ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:03
S27	0	rheumatoid near2 arthritis same nicotinic near3 ("alpha 7" or alpha-7)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:20
S28	483	514/305.ccls.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:04
S29	20	514/305.ccls. and nicotinic and arthritis	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:04
S30	3	514/305.ccls. and nicotinic and arthritis and rheumatoid	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:07
S31	1	"6432975".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:07
S32	0	rheumatoid near2 arthritis same nicotinic near3 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:27
S33	0	rheumatoid near2 arthritis same nicotinic near5 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:27
S34	7	rheumatoid near2 arthritis and nicotinic near5 ("alpha 7" or alpha-7 or ".alpha.7")	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:38
S35	0	racey.in. and tnf and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 14:38

S36	7	tracey.in. and tnf and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S37	0	("2002/0016344").URPN.	USPAT	OR	ON	2005/05/04 14:39
S38	0	".alpha.7" near2 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S39	0	".alpha.7" near3 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S40	0	".alpha.7" and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:06
S41	126	(alpha7 or "alpha 7" or alpha-7) near3 nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:07
S42	24	(alpha7 or "alpha 7" or alpha-7) near3 nicotinic and ("tumor necrosis" or tnf)	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:46
S43	0	tang.in. and cathepsin.ti.	US-PGPUB	OR	ON	2005/05/04 15:17
S44	1	tang.in. and cathepsin.ti.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:17
S45	48	groppi.in. and nicotinic	US-PGPUB; USPAT; EPO	OR	ON	2005/05/04 15:46
S46	1	"6500840".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 10:18
S47	1	"5977144".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 12:34
S48	2	"6838471".pn. "6610713".pn.	US-PGPUB; USPAT; EPO	OR	ON	2005/05/18 12:35